

J. K. Smith.

A
CHINESE
COMMERICAL GUIDE,

Consisting of a
COLLECTION OF DETAILS AND REGULATIONS
RESPECTING FOREIGN TRADE WITH CHINA.

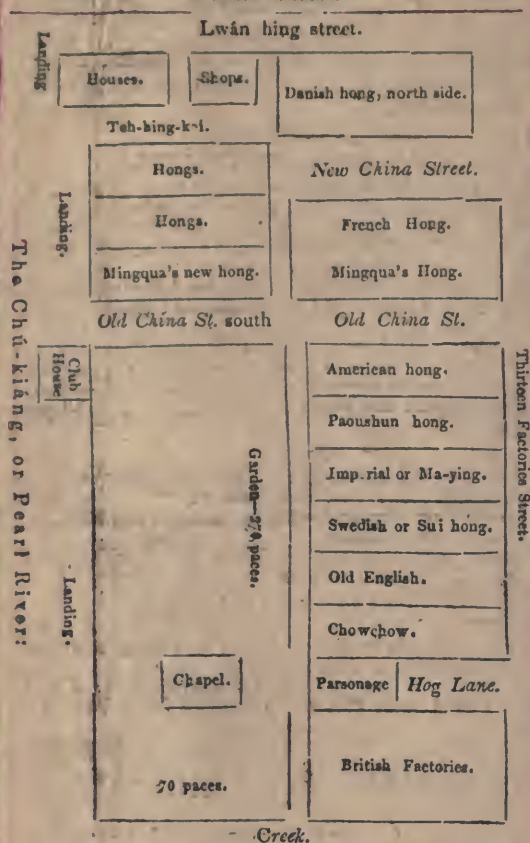
SAILING DIRECTIONS, TABLES, &c.

By S. WELLS WILLIAMS.

Fourth Edition.
REVISED AND ENLARGED.

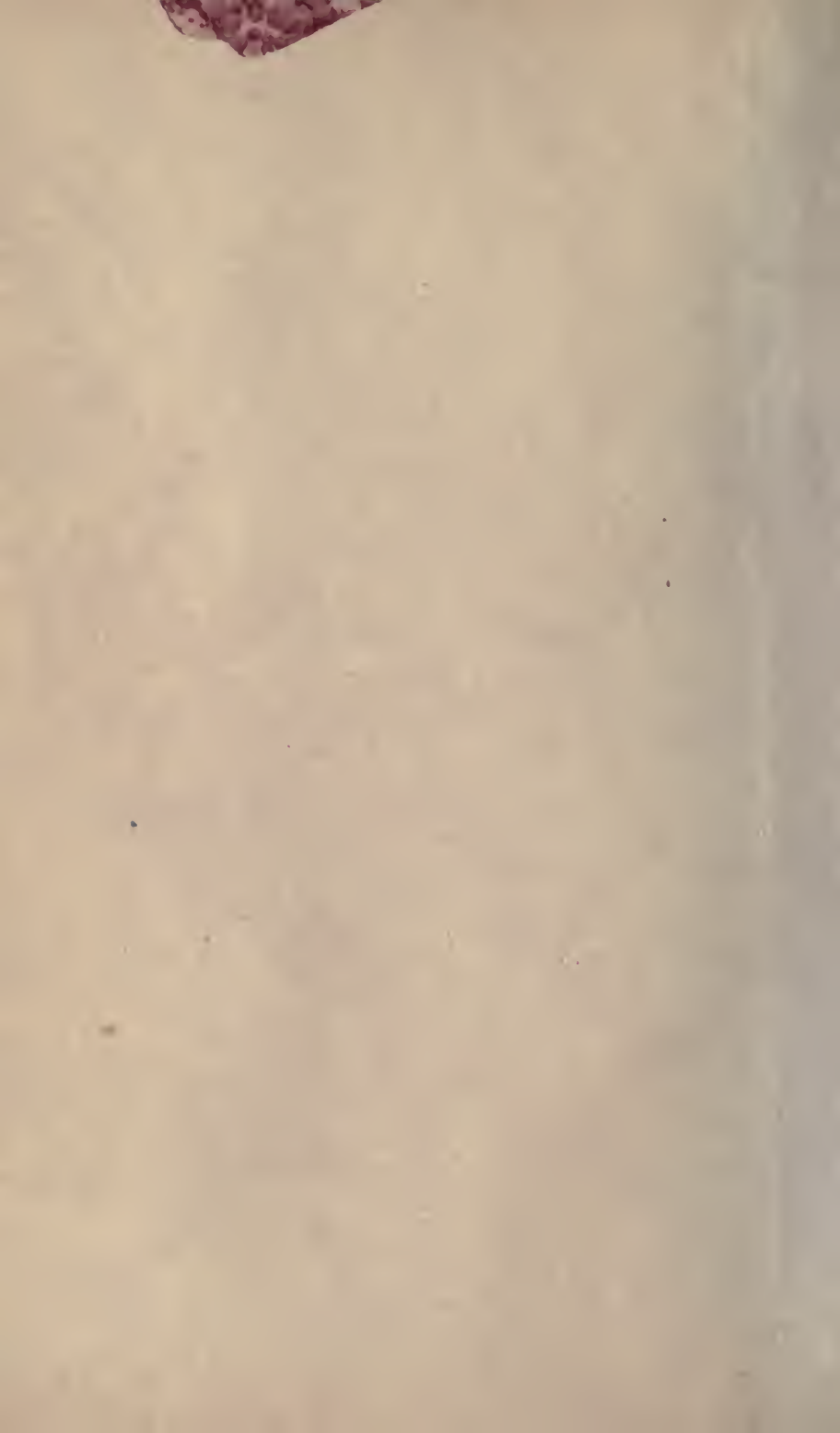
PRICE THREE DOLLARS

Western suburbs.



Hong-merchants' packhouses.

Whatever may be the site selected for Factories hereafter, our hold on the present foreign quarter should not be given up, unless, it may be, that all Canton is destined to be a heap of ashes shortly : in which event the historian of



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CANTON:
PRINTED AT THE OFFICE OF THE CHINESE REPOSITORY.

1856.

OFFICE

COMMERCIAL GUIDE

1894

COMMITTEE OF THE BOARD OF TRADE

RESPECTING FOREIGN TRADE WITH THE

UNITED STATES OF AMERICA

BY H. W. WILSON

Printed by
W. H. WILSON

1894

PRINTED AT THE OFFICE OF THE BOARD OF TRADE

P R E F A C E.

THE first edition of the Chinese Commercial Guide was published in 1835 by the author, John R. Morrison, who was then employed by the British mercantile community in Canton as their Chinese translator, and possessed peculiar facilities for learning all that could be ascertained respecting the foreign trade as then conducted by the hong-merchants. It is still valuable for its data respecting the Chinese trade as carried on twenty years ago, and furnishes much curious information upon the subject, and respecting the tortuous policy of the Chinese government in conducting the trade for its own advantage through the co-hong.

On the conclusion of the war between England and China in 1842, and the publication of the new arrangements for trade according to the British, American, and French Treaties, the Commercial Guide was revised, to furnish all the information which could be obtained likely to be useful to the merchant, using whatever was found in the first edition that was applicable to the foreign commerce with China, or interesting to those engaged in it. The sailing directions for the coast of China, made chiefly by Capt. Collinson, R. N., were inserted in the same volume, and have proved very convenient to shipmasters. In this revised edition, which was issued in 1844, the name of the author of the previous work was retained, for the reasons given in the preface. In 1848, a third edition was printed almost without alteration.

Eight years have now elapsed since the third edition was published, during which time the changes have been many and important. Shanghai, Fuhchau, and Hongkong have become centres of a large and growing trade, while the business of Canton and Macao has diminished, both relatively and absolutely. The opening of the trade with Siam and Japan possesses sufficient connection with that

of China, too, to warrant the introduction of the regulations now in force respecting them. The amount of new matter in this edition is much more than the increase of pages indicates, for a considerable portion of the last has become antiquated; over a hundred pages of this are entirely new, many of them in small type. It is believed that all will prove useful to the merchant or seaman engaged in business in these regions.

In preparing the work, application has been constantly made to merchants and others, who were familiar with the trade, for information upon important points, which has been most willingly given in every case. The description of the various kinds of tea was furnished by J. Butt, Esq. of Canton; and the articles on silk, treasure, and cotton were written by others well acquainted with them. The general remarks respecting the ports of Fuhchau, Ningpo, Shanghai, and Philippine Islands, were prepared by persons who had long resided there. Several new and useful tables have been introduced, some of them not before printed. All these sections can be relied on, and care has been taken throughout the work to make it accurate and complete. That it is absolutely free from errors is more than can be expected, but these are, it is hoped, of minor importance.

S. W. W.

August 26th, 1856.



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COMMERCIAL GUIDE.

CHAPTER I.

SAILING DIRECTIONS FOR THE COAST OF CHINA.

Section I.

NOTICES OF PLACES BETWEEN HAINAN AND AMOY.

THE following paper was partly published in the Chinese Repository, Vol. V., pp. 337-357. It has been carefully revised, and many additions made to it, the Chinese characters added to the names, and the whole rendered a general guide to the islands and places lying in that line of coast. It terminates at Amoy, and its design is chiefly to enable the navigator to identify the principal places mentioned on the charts through the native pilots or fishermen, by showing them the name in Chinese; and care has been taken to get the proper characters from Chinese topographical works or maps. The native names have, in many instances, undergone strange alterations on foreign charts; so that when a foreigner pronounces them, the sound affords no clue to the native pilot in pointing out islands, or showing the way to those places not in sight. Thus *Samoun* has been changed from *Sam-moon*; *Lantao* from *Nam-tai-o*; *St. John's* from *Shángchuen*; *Macao* from *A-ma-ngau*; *Twe-lien san* from *Tui-meen-shan*; *Lamma* from *Nam-a*; and others not quite so much transformed. The uniform pronunciation of the Chinese characters has not been attempted in this paper, but the names of places have been written as they are found on our charts. We purposely omit what is to be found in Horsburgh's Directory, as that work must be in every sailor's hands.

CHINA presents to the sea a long range of coast, for the most part rocky, extending from the Gulf of Tungking in the SW., to that of Chihle in the NW., a distance of nearly 2000 miles. Along the whole of this extent, it is more or less exposed to the waves of the great Pacific ocean, which are only partially broken by the peninsula of Corea, and by the islands of Japan, Formosa, and Lewchew.

Sketch of the Chinese Coast. Four Lines of Coast. Southern Line of Coast.

Beyond the peninsula of Corea, the coast of Manchu Tartary, belonging to China, forms the eastern limit of an inland sea, called the sea of Japan; but the coast there has scarcely been visited. Deeply indented by numerous bays, gulfs, and inlets, and skirted by several very large, and many smaller, islands, forming between one another and the main land numerous straits and harbors, China has, from the very earliest period, possessed an extensive coasting trade.

It has been remarked that China (confining the name to the eighteen provinces, or China Proper,) is of a circular form, having but few interruptions, arising from projections and indentations. Its limits on the east and south are almost everywhere washed by the sea, and are equal in extent to its northern and western boundaries, which are conterminous with Mongol Tartary and Tibet. Looking at the coast alone, and excluding from view its few irregularities of gulfs and promontories, we would say that the form of China is octagonal, rather than circular, and that the coast forms one half of the whole figure, comprising four nearly equal sides. Starting from the mouth of the Yuehnán kiáng, 越南江 or river of Cochinchina, which forms the limit between the Chinese and Cochinchinese empires, if we draw a line of about eight degrees, in the direction of E. by N., with a slight curve to the southward, it will pass over the whole southern coast, excluding only the promontory of Luichau; which, stretching southward about 60 miles, is separated by a narrow strait from the island of Hainan. From Breaker Point, at which this line will terminate, we may draw a second line of about six degrees and a quarter in a N.E. direction, to the northern limit of the province of Fuhkien. This line will cut all the principal headlands of Fuhkien, and will terminate at a small group of islands, marked in some maps as the Kewsan islands. A third line of about five degrees and a half, drawn due north from these islands to the northern point of the embouchure of the Yangtsz', will pass outside of the whole coast, except Kitto Point, south of the river of Ningpo, cutting in two the islands of Chusan and 'Tsunghing. A fourth line, of seven degrees and a half, drawn from the mouth of the Yangtsz' to Tientsin, in the direction of NNW., will cut the promontory of Shantung at its widest part, running nearly parallel with the rest of the coast, at a short distance off shore. From the termination of the fourth line, the Gulf of Chihle runs up northeastward between the narrow peninsula called the Prince Regent's Sword and the opposite coast of Chihle and Manchuria, about three degrees; the Great Wall meeting it about two degrees from its northern extremity.

The southern line of coast. The most western portion of the Chinese coast is the mouth of Annan (or Ngannan) kiáng at the northern extremity of the Gulf of Tungking, or Tonking. This gulf was frequented by European ships, trading with Tungking, about a century and a half since; but the trade has long been discontinued, and only scanty information is extant as to the navigation of the gulf. The gulf is about 35 leagues wide, having the coast of Tungking on

Straits of Luichau. Capital of Hainan. Kerr's nautical remarks. Now-chow.

the west, that of CochinChina proper on the southwest, with the promontory of Luichau and the island Hainan on the coast, being open to the southeast. The western and northern coasts are said to be fronted by shoals and reefs, some of them projecting a great distance from the main land. A few streams flow into the gulf from the province of Kwangtung; and at the mouth of one of these is situated the chief city of the department Lienchau 廉州府 in latitude $21^{\circ} 38' 54''$ N., longitude $108^{\circ} 58' 20''$ E. From the difficulty that we find in gaining any information respecting this place, we infer that its trade cannot be considerable; and that it is probably carried on, for the most part, with Tungking and CochinChina. Kin chau 欽州 is the chief town of the district of the same name, and is situated on the river Kin, a few miles from its mouth in lat. $21^{\circ} 54'$ N. The western coast of the promontory of Luichau 雷州 is almost unknown.

The strait that separates Hainan from the promontory is frequented by junks, and has on its southern shore, Kiungchau 瓊州府 the capital of Hainan, and a place of considerable trade, situated at the mouth of the Lemoo. This river rises in the centre of the island, and running through a course of above a hundred miles, in a northern direction, discharges itself into the Strait, opposite to the southern coast of Luichau. Kiungchau 瓊州府 is represented as a good harbor; it is in lat. $20^{\circ} 2' 26''$ N., long. $110^{\circ} 35' 40''$ E., and is much frequented by Chinese junks, and some of them are supposed to be not less than 400 tons burden; it has forts on each side of the entrance; the passage up to the city, which junks take, is called 牛始港 Niúchí kiáng.

The following nautical remarks by Mr. Kerr, the master of H. B. M. S. Columbine in 1850, affords some data for navigating this little known portion of the Chinese coast; they commence further east than the Straits and reach to Anam.

Now-chow.—From Tyfung Kyoh (the outer island off Tien-pak) to Now-chow, is SW. by W. 40 miles. Now-chow is about 300 feet high, and well cultivated: it is 9 miles long and 3 broad. *Shoals off the Coast.*—Strangers should not approach the eastern point of Now-chow by a course more southerly than W., or W. by S., to avoid the sandbanks on the northern shore. *Shoal off N. Point.*—The north point of the island is W. by N., five miles from the eastern, the coast between being full of rocks. Off this point is a dangerous horn of sand: it would therefore be advisable for strangers to get a pilot before proceeding further; this can be done by stopping a fishing-boat, or by anchoring and sending to the town. Low water would be the best time to enter, as then the banks are visible. *The town* is situated on the western point of the island, which is, SW. by S., six miles from the northern point. *Anchorage.*—Very snug anchorage will be found off the town in a small bay. The

<i>Passage to Southward.</i>	<i>Hongham.</i>	<i>Hoihau Bay.</i>	<i>Cammeé Cape.</i>
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bottom is very irregular, having 6.16, 17.5 and so on; and close to the point 30 fathoms, over which you are obliged to pass, to avoid the sandbanks which border the anchorage on the west side. The Columbine anchored with South Fort N. 57° E., South Point of bay S. 27° E. (Rise of tide nine or ten feet.)

Passage to Southward has three dangers: these are—the Bar, the Flats, and the Narrows. *Bar*.—SW. by S., 2½ miles from the West Point of Now-chow, the passage is very narrow (not more than 4 or 5 cables), and having only 2½ fathoms at low water. *Flats*.—14 miles south from the same point is an extensive flat with only 9 or 10 feet on it at low water; it is from 2 to 3 miles broad, frequently impassable from the heavy sea which runs on it when the wind is strong, it being exposed to the whole drift of the NE. monsoon. Here the *Fury* touched in 3 fathoms, only drawing 14 feet 7 inches. *Narrows*.—S. ½ W. 17 miles from the above Point, the channel is again very narrow, but with not less than 3½ fathoms. This channel is not dangerous, as the water is always smooth, being in the immediate vicinity of the extensive reefs with which the coast in this part is bounded. *Anchorage*.—Between the Narrows and the Bar, the Columbine and *Fury* remained at anchor two nights after unsuccessful attempts to cross the flats. From the Narrows, the channel is wide and free from danger. *Coast*.—The coast from Now-chow to Hongham is sandhills, with a well wooded country three or four miles inland. W. by S. from the flats is a small bay and town the only one visible.

Hongham.—SSW. 25 miles from Now-chow is Hongham, a small village three miles west from the SE. Point of the peninsula of Luichau fú. Some junks were at anchor in the bay, but it must be exposed to the NE. winds.

Kingchau fú, Hoihau Bay.—SW. ½ W., 19 miles from Hongham is Hoihau bay (formed by the estuary of two small rivers), on which is situated Kingchau fú, a first class city, and the seat of the prefect of Hainan and its dependencies. The Chinese here were very civil, sending us presents, &c. *Anchorage*.—The bay and anchorage is protected on the NE. by a sandbank at the mouth of the above river. It is moderately well sheltered, being only 16 miles from the peninsula of Luichau fú. The Columbine, *Fury*, and *Phlegethon* rode out a heavy gale from NE. by N. without any danger. The holding-ground is good. Bearings from anchorage as follows:—pagoda in the town S. 55 E.; two remarkable hummocks (by which the bay will be recognized) S. 42 W.; and a cone-like rock on the sandhills at west extreme of bay, W. ½ S.—Plenty of wood, water, and refreshments can be procured, but the water gets brackish in the passage to the ships.

Cammeé Cape.—From Hoihau anchorage to Cammeé Cape, the SW. point of the Peninsula, the course is N. 70 W. 30 miles, without any dangers. Off this point, Columbine anchored in 12 fathoms, point bearing NE. by N. 4 miles. The pilots said there were rocks

Hoosheak. Gui-e-chow I. Pak-loong Cape. Cow-tow-shan I. Norway Is.

and a sandspit off the point. *Coast.*—From this the coast extends to N. by W. as far as we saw it (about 30 or 40 miles).

Hoosheak.—25 miles from the point is Hoosheak Hill (easily recognized, being alone); to the northward of this is a point with rocks off it. Pilots advised us to go no nearer than 6 fathoms.

Cha-yung Island.—N. 50° W., 48.5 from Cammee cape, is Cha-yung I. It is four or five miles long, and about 500 feet high; it has no anchorage, but a small town in a valley in the centre of the island.

Gui-e-chow Island.—N. 66° W. 15 from Cha-yung is Gui-e-chow; it is about 7 miles from E. to W., and 400 feet high, the western point being perpendicular. There is an excellent harbor on the southern side; it has a small islet in the centre, but is otherwise clear, sheltered from all points, except from about SSE. to ESE. Columbine anchored with the islet on with E. point of harbor ESE., and the W. point of harbor (the perpendicular head as above) S. $\frac{1}{2}$ W. As marked in the charts, there are two islands in this quarter, but Gui-e-chow is the northern one; Ciu-muci-shan appears to be misnamed.

Pak-loong Cape.—N. 51° W., 58 miles from the point of Gui-e-chow is Pak-loong Cape (this is the Pelung cape of the charts), the east point of a bay in which is situated the town and harbor of Tukshan. *Pak-loong-mi.*—S. 5° W. 8 miles from point is Pak-loong-mi, a rock awash at high water. This rock makes the bay dangerous to approach during the night, as it is so far off shore. *Pak-loong Anchorage.*—Columbine and Fury anchored outside the shoals, with the Cape bearing NE. $\frac{1}{2}$ E. distant 6 miles. *Harbor* is formed by shoals on the east, and a low point on the W.; has 5 fathoms; pilots may be obtained.

Cow-tow-shan Island.—S. 25° W. 40 miles from Pak-loong Cape is the S. point of Cow-tow-shan (the Pirate Island of the charts); on this course there are several islands with passages around them, but strangers should take the outside. On the western side of this island is a magnificent bay, many miles in extent, and apparently without any dangers. *Village.*—There are a few miserable huts in the bay where wood and water may be obtained. *Chae Rocks.*—S. 65° W. 39 miles from Cow-tow-shan, is a large cluster of rocks, some of which are always covered. This course is also not free of islands. Columbine passed to southward of Wunlaun, and found a good passage, but only $1\frac{1}{2}$ mile wide. We saw plenty of bullocks (apparently wild) on many of these islands. There is good anchorage near Fung-yung, west 4 or 5 miles from Wunlaun.

Norway Islands.—SW. 4 or 5 miles from the Chae Rocks, is a small group of islands, probably the Norway islands of the chart. *Fie-tze-loong.*—From the Chae Rocks to Oonong (a distance of 20 miles) is a most remarkable bay of islets or rocks, of limestone formation (the New Macao of the charts). Here Shap-ng-tsai is said to have secreted himself, as the water amongst the islets is deep.

Tushan Is. Position of places in Gulf of Tongking. Hainan I. and hills.

Rock off Oonong.—From Chae Rocks to the outside ninepin off Oonong, is S. 85° W., 19.5. *Sunken Rock.*—W. by S. $\frac{3}{4}$ mile from this is a dangerous sunken rock, with only 11 feet on it at low water, and 8 fathoms close to it. Near this are Great and Little Oonong, small bays with insignificant villages. The Cochinchinese villagers were very civil. Columbine anchored with Great Oonong (the W. Bay) NE. by E., $1\frac{1}{2}$, and Ninepin E. $\frac{1}{2}$ S.

Tushan Islands or Pearl Island.—From the rock off Oonong to S. point of Tushan islands, is S. 69° W. 12.5. These islands are off the Tonquin river, which the Columbine, Fury and Phlegethon entered in chase of the pirate Shap-ung-tsai. The entrance is obstructed by a bar, which we crossed at high water in $2\frac{1}{2}$, $2\frac{3}{4}$, and 3; inside the bar the water deepens, and the shore is generally bold, except off the west side, where is an extensive sandbank. In the vicinity of our anchorage were two small towns—Hwafung and Cho-keum. Phlegethon visited latter, which is some miles up the river, and had deep water. Tide flows only once in 24 hours. The natives informed us there was coal in the vicinity, but their reports were so vague as not to authorize our remaining to get any. Plenty of wood can be procured; but little water or provisions.

Return.—On our return we passed outside the Chae Rocks to the southward of Cow-tow-shan, and then shaped our course for Gui-e-chow, Cammee, and Hoi-hau, without any obstruction.

West Point of Now-chow,	20° 51' 10"	North Lat.	110° 32' 30"	East Long.	
South Point of Luichau fu,	20 25 00'	" "	110 23 15	" "	
Hoi-hau Anchorage,	20 7 00	" "	110 15 35	" "	
Cammee Point,	20 12 12	" "	109 44 50	" "	
Cha-yung Island,	20 49 00	" "	109 13 00	" "	
Gui-e-chow West Point,	20 55 00	" "	108 58 50	" "	
Pakloong Cape,	21 31 18	" "	108 9 15	" "	
Cow-tow-shan, South Point, ..	20 55 20	" "	107 42 15	" "	
Chae Rocks,	20 39 5	" "	107 14 24	" "	
Rock off Oonong,	20 37 12	" "	106 54 15	" "	
South Point of Tushan Islands, ..	20 32 42	" "	106 41 33	" "	

T. KERR, *Acting Master of H. B. M. S. Columbine.*

Hainan 海南 is a mountainous island, having however many level inland districts which are well cultivated, and on which are produced several tropical fruits that do not grow on the mainland, in particular the areca or betel nut; the coasts produce cocoa-nuts; and sponges of a very inferior quality are sometimes collected by the fishermen. The mountains, called the Lí-mú shán, are covered with thick forests, the resort of the aboriginal inhabitants, a race similar, it is said, to the mountaineers of Kwangsi and Kweichau. The Chinese inhabitants are chiefly descended of emigrants from Fuhkien, and are spoken of by Gutzlaff, during his stay in Siam, where he met many of them, in terms of high praise. The island extends 55 leagues in a NE. and SW. direction, and is about 35 leagues in breadth. Its northwestern and western coasts are little known, but are said to be lined by shoal banks, extending 6 or 7

Yai-chau.

Yulin-kiang.

Galong Bay.

Lingshwui Point.

leagues from the shore. The coast on the south and southeast is bold, and may be approached very closely, with deep water near to the headlands. There are several fine harbors on the south coast, affording good shelter from the northeast monsoon. These have been partially surveyed by captains Ross and Horsburgh.—In all these harbors, there seems to be a difficulty in getting free supplies of good fresh water.

Yai-chau or Yait-chew, 崖州 is the chief town of the southern part of the island, and is situated a little way up the river, which falls into the bay that bears its name, in lat. $18^{\circ} 21' 36''$ N., long. $108^{\circ} 43'$ E. The bay is described as having "some islets in it, and moderate depths for anchorage, but exposed to S. and SW. winds." The town is on the north bank of the river, which runs into the bay in a westerly direction. Proceeding eastward, we pass Sychew bay, distinguished by a hill with a pagoda on it, and exposed to southerly and westerly winds. We next reach Sama 三丫 bay (so called it is probable, from a fort of that name near by), which affords anchorage for small vessels, inside a number of islets and rocks. A branch of the river at Yai-chau falls into it on the NE., and a walled town, the residence of an officer, stands near the western bank of the river.

Yulin kiang 榆林港 (Elm-Forest rivulet), the bay of Yulin (or Yulin-kan), is separated from Sama by a narrow slip of land. It is in lat. $18^{\circ} 10' 30''$ N.; is well sheltered, except towards the S. and WSW.; and was often, in former days, a wintering place for vessels driven off the Chinese coast in the NE. monsoon. To the northward of the anchorage, is a lagoon or inner harbor, well sheltered from all winds, but affording entrance only to small vessels. On the eastern shore are a fort and several fishing villages.

Galong Bay is separated from Yulin kiang by high land, between four and five miles broad, forming the southern extremity of Hainan; the most prominent part of which is in lat. $18^{\circ} 10'$ N., long. $109^{\circ} 34\frac{1}{2}'$ E. The bay affords good shelter, except from southerly and S. W. winds; and, if moored *under fairs* behind an island, complete shelter may be obtained. We are unable to find the name of this bay in any Chinese map. Horsburgh thus speaks of it: "Having been disabled in a typhoon, in the Gunjavar, September 24th, 1786, we were obliged to take shelter under Hainan, and remained in Galong Bay until the 1st of April following; we walked inland at discretion and found the natives very inoffensive. The island abounds with wood fit for fuel, but none of the timber seems durable, or proper for ship-building."

most part inhabited by a class of people ready at any time to lay aside their peaceful occupations for the sake of plunder. In this neighborhood it is not difficult to procure a pilot, or to forward any

Ling-shwui 陵水 (Lieong-soy), or Tung-tse Point, 桐棲港 variously named from two towns in its neighborhood, is distant about

Tienfung Rock. Wanchow. Tinhosa I. Coast of Reefs. People of Hainan.

24 miles from Galong Bay, in lat. $18^{\circ} 22\frac{1}{2}'$ N., long. 110° E. The intervening coast is a continued curve, forming a considerable concavity, and having the town of Tungtsé on the west, and that of Lingshwui on the north. The latter is a place of some trade, situated near the head of a small lagoon, which is entered by a narrow and very shoal channel from the anchorage near Lingshwui Point. This anchorage is very much exposed, and is safe only in the northerly monsoon. The surrounding country is well cultivated, forming a beautiful plain, with high land in the background. From this point, the eastern coast becomes more level, the high mountainous land being visible only in the distance. The land is better cultivated than on the south, and produces great numbers of cocoa nuts.

About ten miles E. by N. from Lingshwui Point, is Tienfung 天峰 about $18^{\circ} 29'$ N., a cluster of large rocks, which, from one of them being higher and whiter than the others, has acquired the name of Sail Rock. It is thus mentioned in Gutzlaff's first Journal: "On the 10th of July, we saw Tienfung, a high and rugged rock. The joy of the sailors was extreme, this being the first object of their native country, which they espied. Tienfung is about three or four leagues distant from Hainan." Beyond this, no place of shelter is met with on the east coast of the island, with the exception of a bay on the west side of Tinhosa island, in latitude $18^{\circ} 46'$ N., longitude $110^{\circ} 29'$ E., or $3^{\circ} 15'$ W. from the Grand Ladrone. In the neighborhood of this island is Man chau, 萬州 or Wán-chow, (the chief town of the district), of which an account is given us by Mr. J. R., a gentleman, supercargo in the East India Company's service, who was wrecked on the coast in a typhoon, in the course of a voyage from Macao to Cochinchina, in 1819. He reached the land about twenty miles S.E. from Wánchow. "The whole coast," he says, "as far as the eye could ascertain, was lined by a most dangerous reef of rocks, mostly high out of the water, and extending one league from the shore." It was hereabouts, to the westward of the Taya Is., that the Sunda was wrecked in Oct. 1839. Proceeding along the coast, if the weather be calm, we find ourselves sailing among fishing-boats and stakes, until we have passed the island of False Tinhosa, the high mountain Tung-on, the Taya islands and Hainan Head; the last in lat. 20° N., and $110^{\circ} 57'$ E.

Before finally leaving Hainan, we cannot refrain from subjoining a few remarks from Captain Ross. "From my own observations, (he says) when we were near the shore, and from the information of a very good Chinese pilot we had on board the Antelope in 1810, it appears that the east coast of Hainan does not afford any place of safety for ships to anchor in, and the bottom was in many places mixed with coral rock. * * * In the few communications we had with the people of Hainan, they were found to be civil, and ready enough to part with refreshments when the mandarins were not present; but whenever the latter appeared, they proved just as

Fishery of Hainan. Chi-kan. Nowchow. Timber from Hainan. Tienpih.

arbitrary and rapacious as we found them on the coast of China. From what I observed, I am inclined to believe that a number of bullocks may be obtained on Hainan, as they appeared to be plentiful though small. There are numerous fishing-boats belonging to Hainan, that are built of a hard and heavy wood and sail fast: many of them every year go on fishing voyages for two months, and navigate seven or eight hundred miles from home, to collect the *bicho-de-mar*, and procure dried turtle and sharks' fins, which they find amongst the numerous shoals and sand-banks that are in the southeast part of the China Sea. Their voyages commence in March, when they visit the northern bank, and leaving one or two of their crew and a few jars of fresh water, the boats proceed to some to the large shoals that are nearly in the vicinity of Borneo, and continue to fish until the early part of June, when they return and pick up their small parties and their collections. We met with many of these fishing-boats when we were about the shoals in the China Sea."

The height between Hainan Head and Tienpih hien, forming the eastern coast of the promontory of Luichau, is little known. Chikan 赤坎 is a place frequented by Fuhkien junks on the northern side of the Straits, nearly opposite Kiungchow. Che-ting-fow, which has received the name of Nowchow, probably from one of the neighboring islands, is on one side of an estuary, into which flows a river of considerable size, and some inferior streams. Several miles up the larger stream is Hwachow 化州, and still further the city Kíuchau fú 高州府. On the eastern point of the estuary is situated the town of Wúchuen hien, 吳川縣 or Ouchuen, said to possess a good but small harbor. Nowchow is described by Horsburgh, as a small port, dangerous to enter; but when in it, affording good shelter. He adds that it was a rendezvous of the pirates; and that the "Maria," a Portuguese ship, went into the place for water, and was captured by them. It is in lat. 20° 55' N., long. 110° 26' E. The native trade between Fuhkien and places west of Tienpih, appears to be of a very trifling nature, consisting chiefly of coarse soft sugar, the sugar of cocoa-nuts, ground-nuts, and some other fruits, manure, &c., for which the people of Fuhkien give in exchange the coarsest of their manufactures. The timber of Hainan is in a great measure appropriated by the emperor: but some of the finer kinds are brought to Canton, and wrought into articles of luxury and taste. The trade from Tienpih, at which we now arrive, consists almost entirely in salt, manufactured by evaporation on the mud flats of the bay, that are almost wholly dry at low water.

Tienpih hien 電白縣 (or Teenpak) was at one time, we believe, frequented by European vessels as a place of trade; and is said to be, even now, a place where more hospitable reception may be met with than in most other ports of the south coast of China.

Bay of Tienpih. Islands near it. Haeling-shan. People apt for piracy.

The usual anchorage for foreign vessels is under the islands which lie off the bay of Tienpih. Foongkyche 鳳鷄子 lies about 13 mile west of the fort and island of Paukpyah 博賀; and Lintoa 蓮頭 is at the entrance of the harbor, and on Chinese maps represented as an island. The Chinese harbor which lies at the head of a shallow bay near the town, and can be reached at high water in boats, through canals intersecting the muddy flats by which the bay is filled up. The bay is surrounded by high land on the north, east, and south: a rivulet flows into it on the northwest, and wears for itself a channel, which affords depth of water sufficient for Chinese junks. Taefung kioh, 大放角 the outermost island in the roads, is in lat. $21^{\circ} 22' 30''$ N., long. $111^{\circ} 13'$ E. The town is walled, and is the residence of a magistrate: it is of considerable extent.

Leaving the Bay of Tienpih, we pass by a few unimportant islands and places, as Tychook chow 竹州 or Bamboo I., Chinchow 靑州 or Green I., Songyue Point 雙魚 or the Double Fish Head, Káupei chow 校杯州 and the Brothers, till we reach Haeling-shan. This is an island of considerable size, separated by a narrow channel from the main land on the north; having on the west a safe, but confined, harbor; and on the northeast an extensive shoal bay that has not yet been explored. The harbor of Haeling-shan 海陸山 (or Huiling san) is formed by a high point of land called Mt. Lookout, and two small islands called Mamee chow 馬尾州 or Horse-tail Is., on the south; by other high land on the island, it is sheltered from easterly and NE. winds, and by distant high land on the main, from westerly winds. Haeling-shan is high and mountainous, but with some well cultivated places. One elevated peak is named Sugar-loaf hill. The main land in the neighborhood is mostly low, with high land seen in the distance. We now begin to perceive our proximity to the river of Canton; and are entering upon the extensive archipelago, which lying off the embouchures of this river, is frequently the resort of pirates, and for the most part inhabited by a class of people ready at any time to lay aside their peaceful occupations for the sake of plunder. In this neighborhood it is not difficult to procure a pilot, or to forward any letters to Canton. There has been more than one overland journey from Haeling-shan to Canton, performed by shipwrecked Europeans; but from the constraint exercised upon them, they have gained but little information. The cases of the "Bee," captain Warden, of the boat's crew of the "Argyle," and the crews of the "Sunda" and "Castle Huntley," are among the best known of late years.

The islands which extend from Ta-aou to the Canton river, form an almost unbroken chain, running nearly parallel for some

Islands west of St. John's I. Mart of Kiangmun. Channel leading by it.

distance with the coast of the main land, are separated therefrom by a channel, in some parts open and clear, in others nearly closed up by islands. Setting sail from the harbor of Haeling-shan, and passing among several little islands—the Mandarin's Cap, called Fanshik 礮石 or Alum Rock, Nampang 南彭 or South Paps, Quoin (Lai-tau shan 犁頭山 or Ploughshare I.), Tywok 大鑊 or Great Caldron, Neewok 二鑊 or Small Caldron, and others—we leave on our left the bluff headland of 'Ta-aou 大澳 or Tai-o with its bay and fortified village, and enter the channel, which we have mentioned, on the north of Háchune 下川 (Hiá-chuen, or False St. John's). As soon as we have taken a cursory survey of this channel, we will return and continue our course on the outside of this and the other islands.

Soon after entering the channel, we find on our left the town of Wangkaou sze 黃交司 the residence of a civil magistrate. A little further, and nearly due north from Shang-chuen 上川 or St. John's Island, is a village and the military town of Kwang-hai wei, 廣海衛 a place at which the Jesuit missionaries formerly, on some occasions, landed, at a time when their entrance into the country received the sanction of the government. Between St. John's and the next large island are several smaller ones; and north of these lies the island Toonkoo or Toonko, which nearly blocks up the channel. A narrow strait between it and the main land, passing in the neighborhood of the town Changsha-tai, 長沙台 brings us out again into broader and deeper water. We are now at one of the embouchures of the river of Canton, which leads us toward Kiangmun 江門 (Kongmoon or River's Mouth), the largest trading town in the neighborhood of Sin-hwui hien 新會縣. Kongmun is situated at the point where the West river, flowing from the northwest under the walls of the city Sinhwui hien, unites itself to that arm of the Pearl river, which, leaving the main stream southwest of San-shwui hien (or the Three Streams), flows south and eastward in a large stream through Sin-hwui and Shunteh, towards the sea. Nature and art have combined to join many parts of its course with the more eastern arm, which, passing by Hiangshan, discharges its waters into the 'Broadway,' whither we now proceed in our survey. Kiangmun is an important entrepôt at the mouth of the river leading to Sin-hwui, and the largest on the coast; it is the resort for many of the junks which trade with the Indian Archipelago, and has constant intercourse too with Canton, Macao, and the intermediate towns.

Departing from this place, we enter a narrow channel among islands, and passing by the town of Hwang-liang too, 黃梁都

Course of West River. Mongchow I. Hachune and its town. St. John's I.

where are many junks, we presently arrive in the Broadway, (part at least of which is called Haksha yeung 黑沙洋 'Black sand sea,' on Chinese maps,) and find ourselves at the entrance of the 'Narrows', leading up to Hiangshan hien 香山縣. The arm of the river which terminates here, leaves the main stream on the west side of Canton. A little above the Bogue, their waters reunite, but only in part. Below the Bogue, also, the more western arm communicates in several places with the large estuary, over which the islands of the Canton River are scattered. The extensive and hilly island of Hiangshan forms an effectual barrier to any further union of waters, until their discharge a few miles west of Macao, at the place where we have now returned. Beating down the Broadway, we may either reach Macao by a short passage between two islands, or may pass out between Langpihtau, or Lampaçau, and Montanha islands, when we shall find ourselves a few miles northwest of the Great Ladrone.

We now return to the island of Hachune but we pass over the names and situations of the numerous smaller islands around it; since should any one desire to burden his memory with their names, he will easily find them in the Directory. Mongchow 漳州, a little to the westward of Ha-chune, is the only island in that direction, which affords anchorage for ships. Hachune is elevated, and is about eleven miles in length, extending in a NE. and SW. direction. An anchorage on the west side of the island, where are two small bays, affording shelter for vessels of light draft, is called Hachune Road or bay. But what is regarded as the harbor, is on the south side of the island, in Namou, or Nan-aou chung 南澳涌 'South bay.' A village at the bottom of the bay, and an islet which shelters it to the SE., have both also received this name, though primarily, as its signification testifies, it is the name of the bay itself. On the west and south, the harbor is sheltered by a long projecting point of land: the SW. end of the island, in lat. $21^{\circ} 35' N.$ and long. $112^{\circ} 31' 30'' E.$, has seven and eight fathoms water close to it. The high land which rises on the north and east shelters the bay on those sides. There is no harbor on the eastern side of the island.

About fourteen miles east from the SW. point of Hachune is the south end of St. John's. Between these two, lies a group of islets called the Five Islands, *i. e.* Round I., Wongpú-chow 黃埔洲 or Cricket I., Pepa-chow 琵琶洲, and two other smaller ones, which is the only interruption in a passage, free from all hidden dangers, and having from five to six fathoms water, on a soft ground. St. John's or San João, received its name from its first visitors the Portuguese, by a slight change of the Chinese name, Shangchuen. It is also called Sanshan, or as first written by Matthew Ricci, Sançian. The island is five leagues in length, NNE. and SSW.,

Shittoe Bay. St. John's. Islands east of it. Tyloo I. Lampaçao I.

and in coming from the east, appears as if separated in the middle, whence it has often been taken to consist of two islands. There are several bays on its NW. and western sides; Shittoe or Satty bay 沙底 is the best known. That of Sanchau-tang 三洲塘 on the northwest appears to have been the one usually frequented by the Portuguese traders, and is the place where Francis Xavier was interred in 1552. It was then called according to Portuguese pronunciation, Tamáo, that is, Tá-ngao or Ta-aou, the Great Bay. The Portuguese first traded here in 1517. In 1521 they were expelled. They afterwards returned; but before 1542, they appear to have almost deserted it for Lampaçao, to the eastward.

Leaving the navigator to draw his information respecting the other bays, and respecting the neighboring small islands, (as Wy-caup 桅夾 or the Mast-stock, Lieu-chew or Woochoo 烏猪 or Black Hog, the Wizard Rocks, E-kam 二金 &c.,) from Horsburgh, we will pass by Tykam, 大金 Coucock 鼓角 or Drum Head (which affords anchorage and shelter from N. and NE. winds), Tymong, Tyloo, Sanchau or San-tsáu, 三籠 until we reach the island Wongkum, 大橫琴 Hwangkin, or Montanha. Tyloo 大老 is the island near which Peruvian ship "Caldera" was captured by pirates in 1854, for which act the town of Kúlan was partly destroyed by the English ships. It was near this in 1841, at the village of Fí-shá-tsiin, 飛沙村 that the cutter "Louisa" was lost in 1841, with Capt. Charles Elliot and Commodore Sir Gordon Bremer on board. Between Montanha and San-tsáu is the entrance to the Broadway, which we have before mentioned.

Here we look in vain for the particular island, which, under the name of Lampaçao (Lang-pih-tsáu 浪白籠), was once, for several years, the residence of many Portuguese merchants. None of the islands lying outside, between St. John's and the Montanha, afford sufficient shelter against all winds; and we must therefore seek for it within the entrance of the Broadway. It is strange that a place, where there were said to have been 500 or 600 Portuguese inhabitants in 1560, should now be entirely lost to the recollection of persons living no further from it than Macao. The island was occupied by the Portuguese in 1542; in 1554 the trade was concentrated there; in 1557, Macao began to rise into notice; and 1560 is the latest date at which we find any mention made of Lampaçao; but it was then, apparently, a flourishing place.

The Broadway. Islands at its entrance. Ladrone and islands near them.

The Broadway has sufficient depth to admit large ships a considerable way up; and may therefore be useful in a gale to vessels that have parted from their anchors. The Montanha, Mackarera, 小橫琴 with Ballast I. or Mongchow 芒洲 and the Lappa islands, with part of Hiángshan, bound it eastward: Santsaou, Paktäng I. 白藤山 *i. e.* White Vine hill, and several other islands, westward. All these islands are elevated.

We must pass rapidly through the well-known harbors and among the islands in the estuary of the Canton river, merely mentioning the names of the larger islands and places as we proceed. With Tyloo and Santsaou on our left, as we enter from the southward, we have on our right the Great and Little Ladrone, (called Manshan 萬山 or Lo Manshan 老萬山, *i. e.* Old Ten-thousand hills,) and Potoe; and further east, a little to the southward, commences a line of rocks and islands, of which the Asses' Ears is the most conspicuous point. The first is called Gap Rock or Mamme chow 馬尾洲 beyond which several rocks and islets occur, of which Mun chow 蚊洲 or Musketo I., and Ping chow 平洲 are the largest, leading easterly to Yunghoy 湧鞋 or Yung-gai 容涯 and Kaipong 雞澎, or the island of which the highest peak is the Asses' Ears (called Keemchung me 鉗虫尾 *i. e.* Claw Pt.). The Lema Islands consist of three principal islands; the largest and most easterly (called Tamquan tow 擔棍頭 *i. e.* the Carrying-Pole Head) being inhabited; between the Grand Lema and Yachow 也洲 is a channel called Yatmoon 一門 *i. e.* First Passage, and between Yachow and Echow 二洲, is another channel called Emoon 二門 *i. e.* Second passage.

The Ladrone, from its height and position, is the standard landmark for vessels entering by the Western Channel. Northeast of the Great Ladrone is Pootoy I. 蒲台 *i. e.* Mat-grass terrace, and beyond that Great and Little Chookchow 竹洲 or Bamboo I. NW. of Pootoy is Tongho or 東澳 Tung-o, sometimes witten 塘壕 (Tong-ho), on the eastern side of which is Boddam's Cove, where one of the E. I. Company's ships drawing 21½ feet, once rode out a typhoon safely. North of Tongho is Léung-neet (or Léung-eep 兩葉 *i. e.* Two Leaves) consisting of a larger and a smaller islet; Wongmow or Wung-boo 黃茅 lies west of the latter, and still further west is Potoe 蒲台 or Passage Islet, a flat sloping rock, lying in mid-

<i>Islands east of Macao.</i>	<i>Typa.</i>	<i>Inner Harbor.</i>	<i>Kumsing-moon.</i>
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channel, bearing NW. by N. from the Little Ladrone. Proceeding northward, Tylo w chow 大流洲, Tylok 大碌, and Sylok 細碌 *i. e.* Great and Little Rock, Pyramid I. or Samecock 三角 *i. e.* Three-peak I., and Chung-chow 清洲 called Water I. on the charts, all lie nearly opposite Macao on the eastern side of the Great Western Channel.

Facing it on the west, are Ko-ho 九澳 or Apomee 亞婆尾, & Typa-quebrada or Tan-tsai 潭仔, the outer point of which is called Cabareta Pt. or Kai-keng-tow 鷄頸頭 Cock's-neck Head. Between these two islands is the entrance to the Typa Anchorage, called Shaptsz' moon 十字門 *i. e.* Cross-gates, which is between Typa I. and Mackerara, looking northward on Macao. Macao Roads, called Sha-lek 沙瀝 are wholly open and undefended; the Inner Harbor is small and shallow, and the approach to it rather difficult, but it affords good shelter. The entrance to it is around the south end of Macao, passing inside of Pedra Areia, a rock under water off the Bar Fort. The vessels lie near the town; on the opposite side is the Lappa or Padre I., called Tui-meen shan 對面山 *i. e.* Opposite hills (750 ft. high), where the Portuguese were formerly permitted to reside, and where are now to be seen remains of buildings. Monkey I. or Malow chow 馬騮洲 lies off the Bar Fort, at the southern entrance, and Green I. or Tsing chow 青洲, at the northern end, of the Inner Harbor. The passage through to Casa Branca or Tseenshan 前山 north of Lappa I. is too shallow for anything but small boats.

Kumsing-moon (金星門 *i. e.* Golden-star anchorage) is a fine bay on the eastern side of Hiangshan I., about twelve miles north of Macao, from whence it may be reached overland. It is screened on the east by the island of Kee-ow 淇澳 on which are some houses built by foreigners near the village. The entrance is deep close to the southern shore. Beyond this anchorage, the coast of Hiangshan island trends off to the NW., till it meets the Broadway channel. The Nine Is., called Kow-chow 九洲 or Kow sing 九星 *i. e.* Nine Stars, lie off the Barrier (called Kwan-chap 關閘) between Macao and Kumsing-moon.

Lintin I. (called Lingting 伶仃 *i. e.* the Lonely One,) is a conspicuous island in the bay above Macao; the anchorage is on the southwest side, and is safe only in the northeast monsoon; it has

Lintin I. The Bogue. Second Bar Pagoda. Whampoa. Dane's I.

not been frequented by foreign ships for many years. The Bogue or Bocca Tigris, (a translation of Fú-moon 虎門 or Tiger's Gate, the Chinese name,) is about 30 miles NNW. from Lintin. As you pass up the bay, the high main land on the east belongs to the district of Sun-oan. Lankeet I., or Lung-ute 龍穴 *i.e.* Dragon's Cave, and Boat I., or Sampan chow 三板洲 lie on the left near the Bogue. Chuenpee 穿鼻 (*i.e.* the Bored Nose, from a hole in a rock near by,) and Tykoktow 大角頭, *i.e.* Great Horn head, are the first points on each side above Lankeet. The fort on the low point called Chuenpee Pt. is called Shakok pautoy, and guards the entrance into Anson's Bay. Through this bay a channel leads up to Chunhow 鎮口 an admiral's station behind Anunghoy Ft., where in 1839, Lin destroyed the opium delivered up by Captain Elliot.

Anunghoy Ft. 亞娘鞋 *i.e.* Girl's Shoe, is opposite Wangtong on the east. North and South Wangtong, 橫檔 *i.e.* Thwart-the-way, are admirably situated for defending the passage; there is a station on North Wangtong where ships passing by report themselves. Opposite and above Anunghoy is Tiger I., called Taifoo 大虎 Great Tiger I., and beyond it are E-foo and Sam-foo, or Tiger I. No. 2, No. 3. We are now fairly within the Choo kiáng 珠江 or Pearl river, one of the largest streams in Southern Asia. The reach from the Bogue to First Bar is called Sz'tsz' yáng 獅子洋 *i.e.* Sea of Lions, and the land on each side is low and well cultivated. Second Bar Pagoda is called Fow-leen tap 浮蓮塔 *i.e.* Floating Lotus Pagoda; it is also known by the name of See-chee tap from the name of the Reach. The Bar is known as Ho-tun tseen 蠔塹淺 or Oyster-heap Shallows, from a creek of that name near by. Above First Bar, (called Tai-ho 大蠔) the Brunswick Rock, called Yu-tow shek 魚頭石, or Fish-head Rock, occurs. Near it the 東江 Tung-kiang or East River, flows in from the eastward, having the large sugar and oil mart of Sheklung at its mouth.

Whampoa anchorage 黃埔 takes its name from a village at the south end of the island, having Danes I. or Chéung-chau 章州 and French I. (佛蘭西岡 Fat-lan-sai kong) on the southern face. Whampoa Pagoda, called Pa-chow tap 琶洲塔 *i.e.* Lyre I. pagoda, stands in the middle of Whampoa I. or Lyre I.; and Lob-creek Pagoda, called Chikkong tap 赤岡塔, is on Honam I., both of them conspicuous objects in going up the river. A fort, called

Forts above Whampoa.	Toonkoo I.	Kapshui-moon.	Islands in it.
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Howqua's Folly, used to stand at the western point of Whampoa I., but has been removed and rebuilt on the opposite side of Fidler's Reach since the Barrier was filled in; there are two forts on the north shore near the Barrier at Leeptuk 獵德 village; Napier's Fort, or Sun-sha-me páutoi 新沙尾炮臺 is opposite Howqua's Folly on the east end of Powder I., at Taishatow 大沙頭. From this point, we soon reach the Foreign Factories, passing by French Folly, or Tung pautoi 東炮臺 *i. e.* East Fort, and then close to the Dutch Folly, or Hoi-choo' pautoi 海珠炮臺 *i. e.* Sea-pearl fort.—We must now return to the Bogue.

Proceeding in a SE. direction from Chuenpee, we pass by several islets in the bay off the district of Sun-oan 新安縣 of which Fansyak or Fanshek 礮石 *i. e.* Alum Rock, and Mahchow 孖洲 are the outermost on the west, and reach Urmston's Bay, a safe anchorage off Toonkoo I. 銅鼓 *i. e.* Brass Drum; nearly east of this spot lies the market town of Sai-héung, the port of Sun-oan city. Passing on, by Sawchow 筲洲 or Basket I., we open out the Capsing-moon, or Kapshui-moon anchorage, south of Castle Peak. The opium ships formerly lay here in the summer season. The passage is much used in going from Macao to Hongkong, and is safe from all hidden dangers; Chulocock 赤瀝角 is a large island on which are granite quarries; and beyond it eastward are the E. and W. Brother, (Shéung mo-toe 上磨刀 and Ha Mo-toe 下磨刀 *i. e.* Upper and Lower Whetstone,) after which we enter the Kapshui-moon 急水門 *i. e.* Swift-water passage, and reach Hongkong bay. A small islet, called Makwan on the charts, and which may be the Ma-on 馬鞍 or Saddle I. of one Chinese map we have seen, lies in the middle between Lantao and the main. The passage north of it is called Kai-chap moon 鷄閘門, and towards the northeast there is a bay protected by the island Chung-yue on the south, which affords good anchorage, is perfectly landlocked, and was the principal rendezvous of the pirates in the early part of this century, and has been an infamous place ever since. As you pass into Hongkong harbor, Wanchun chow 溫珍洲 (also correctly called Yeung-shune chow 仰船洲) lies on the northern side, a red colored and barren islet.

Lantao, the largest island in the estuary below the Bogue, is about 15 miles long, and $5\frac{1}{2}$ in its greatest breadth; its peak is about 3000 feet high, and the loftiest summit in this region, but foreigners have

Lantao I. Islands south of it. Lema Channel. Hongkong Harbor.

never been to the top. It has several villages on its shores, and a fort, called Sheksun pautoi 石笋炮臺 on its SE. side; the village Tyho 大澳 on its eastern shore has given the foreign name to the whole island, which is usually called Tai-yu 大嶼 *i. e.* Great Island, by the Chinese; it was at Ty-ho that the steamers "Queen" and "Barracouta," destroyed 17 piratical junks, Nov. 5th, 1855. The town of Toong-chung 東涌 on the northern shore, opposite Chulocock I., is the largest on the island.

Lantao forms part of the northern bound of the Lantao or Lema passage, the usual entrance for vessels from sea going up to the Bogue from the eastward. South of it, the sea is filled with islands of various sizes, few of which are inhabited, having, generally, safe passages among them. On the south side of the channel, at the S. W. of Lantao, are three large islands, the southernmost of which is called Laf-sam-e, or more correctly Lapsapme 攏撻尾 *i. e.* Lumber tail; between the one NW. of it and Chungchow sye, is the passage Ngow-tow moon 牛頭門 *i. e.* Ox-head passage; this last island is also called Yungshoo tow 榕樹頭 *i. e.* Fig-tree Point; but it is down on some charts as Chungchow sye, though probably incorrectly. E. and W. Chichow 芝洲 or Hemp I. (or Tsat chow 七洲 Seventh I.,) lie on the south of the channel, and the Socko chow Is. 石高洲 *i. e.* High Stone I., and Achow 鴉洲 or Crow I., on the north side.

In the Lema channel on the south, between Lingting I. (called Ngoi Lingting 外伶仃 or Outside Lonely One), and the Asses Ears, are the Samoan Is., corrupted from Sammoon 三門 or Three passages; and west of them is Ichow 葵洲 or Ai-chow, *i. e.* Low I. On the eastern side, as we pass up by the Lamma channel to Hongkong, the Lamma I. is the largest island; its name is corrupted from Nam-a 南丫 'the Southern Fork,' through the similarity of the two sounds, *nam* and *lan*; it is a large island, and contains several villages. On the western side, Cheungchow 長州 or Water I., containing a pretty large population, is the most conspicuous and best known. Northerly from it lies Nykoo chow 尼姑洲 or Nun's I., and one or two other small islets, with Cow-ee chow 校椅洲 *i. e.* Arm-chair I., which has sometimes given name to the channel. This leads us by Green I. again into the harbor of Hongkong. Passing through this harbor, the barren jutting point of T'seemsha tsuy 尖沙嘴 *i. e.* Peaked-sand Beak, upon which are some huts, is

Kowloon. Lyee-moon. Tytam. Pootoy. Waglan. Tathong-moon.

the principal point on the northern side; beyond this, the bay of Kowlung 九龍 'Nine Dragons,' runs up inland, and when opposite the N. E. point of Hongkong, runs out in another point, the two forming the Lyee-moon 鯉魚門 *i. e.* Carp Passage, through which vessels proceed to sea eastward. Tytam 大潭 is the name of a hamlet and bay on the south side of the island of Hongkong, and Chekchoo 赤柱 or Stanley is a village west from it. On the S. W. side, there is a cove and a cascade, where ships used to water, named Iliangkiáng 香港 'Fragrant Streams,' which has given name to the whole island.—It may here be mentioned, that the Chinese give the name of *chow* 洲 islet, or *shan* 山 hill, only to small islands which can be taken in at one view; consequently, Hiangshan, Lantao, and Hongkong, are not called islands.

Several islets are seen in the offing southward from Tytam Bay, and between it and them is a channel, called Singshee-moon on the charts, but which in Chinese books is called Sheungchoo moon 雙箸門 *i. e.* Pair-of-chopsticks Passage. The principal of these islands is called Pootoy 蒲台 (a favorite term for islands hereabouts, as there are three of that name); Lochow 老洲 is that nearest Tytam Bay, and due east of it are Sonkoo and Waglan; the former of these is called Sung-keung 送羌 in Chinese maps. We have now reached the eastern limits of the estuary of the Pearl River; which from the bay of Haeling-shan extends along the seacoast nearly a hundred miles. It is one of the most singular embouchures of any known river, and its numerous passages have always been the resort of lawless men, who have preyed upon its traffic, and opposed their government by force.—From this to the Cape of Good Hope, we shall only give the Chinese names for the most important places.

Tathong Moon (Tatung mun 大東門 Great Eastern passage, called on some Chinese maps Fuh-tang mun 佛堂門 or Budha's Temple pass,) is a passage between the east side of Hongkong, and a bluff point on the main land, off which is a small island named Tamtoo. It leads from the southward into the Lyee-moon passage, east of Hongkong. A little northward of the bluff point is a small bay, which will afford shelter during a gale. Taking a fresh departure from hence, we bend our course northward, with but a little easting, the land now trending in that direction, passing by Wochow 菓洲 and Ninepin, and enter Typo hoi (Tapäng hai 大鵬海) or Mir's Bay. This is a deep bay, of which the southwestern shore is but a

Typo hoï or Mir's Bay. Harlem's Bay. Hunghai Bay. Pedro Branco.

few miles to the NE. of Kowloon. The military town of Tapäng is not in this bay (to which it gives name), but on the other side of a narrow piece of land by which this bay is separated from a deeper gulf to the eastward. Mir's Bay affords good anchorage on its eastern shore, and shelter from all winds except those between SSW. and S.

Rounding the promontory which separates Mir's Bay from the adjoining gulf or inlet, we pass Single Island or Chuenchow 專洲 and 'To-necang 沱寧 on the west, Mendoza Island on the east, and enter the gulf. On the left, well protected by the promontory, is the town and harbor of Tapäng or 'Typoong; on the right, beneath an elevated point of land named Fokai Point, is the fortified town of Pinghae 平海 and a bay with a fine sandy beach, named Harlem's or Pinghae Bay. At the bottom of the gulf are numerous villages, and an inlet called Fanlo kiang, at the head of which a fine town is situated. This last cannot be approached, the water being too shoal. Tapäng harbor yields perfect security to small vessels, and to large ones protection from southerly winds. Harlem's Bay affords protection against a northern or northeast gale; but cannot be considered safe in a typhoon.

Having rounded Fokai Point, passing by Tungteng 東掟 and Saiteng 厓掟, we approach another bay, shoal towards the upper part. This is the bay of Hunghai, in the district of Haifung hien 海豐縣, pertaining to the department of Hwuichau fū. It is open to the south. On the east side is a town, Tai-sha-me, 大沙尾 or Tysammee, and further in a village named Ma-kung. The anchorage in the inlet of Taishame is confined, and the entrance shoal. Salt is prepared here in large quantities by evaporation.

Off the western side of Hunghai Bay, distant 19 miles S. 42° E. from Fokai Point, and 49 miles eastward of the Great Lema, is a large white rock, named by the Chinese Tae-sing-chan 大星簪, *i. e.* Great Star Pin, and by foreigners Pedra Branca. This name is often, from ignorance, written Pedro Branco, and sometimes also Pedro Branca.

As we leave Taishame, we stand off a little from the coast to avoid the rocks which here line the shore. The sandy and sterile appearance of the coast is still almost everywhere retained. After a course of about 20 miles, we enter the bay of Khee-seak (Kiehshieh 碣石 or Ke-shek), having on our left Shalung Point, with another

Khee-seak. Bay and Town of Kupchee. Breaker Point. Chinghai.

headland, a little to the northward; and on our right the rocky islets Seekat 西桔 and Tungkat 東桔, (or W. and E. Kumquat,) and the fort and city of Kiehshieh, called by Horsburgh Hieche-tchin. This is a naval station; and here is a fleet of war junks, under the command of a vice-admiral. The bay has good anchorage, affording shelter from westerly and northerly winds, and from the northeast monsoon, but would not probably be often used.

Leaving Kiehshieh, we proceed along a sandy and hilly coast, turning a little to the northward of east. A point named Wootang (Ootong 湖東) projects a little from the otherwise unbroken beach, and on it is a fort. Beyond this the coast curves slightly around 田尾漂 Tongmi Pt., and we find ourselves in the Bay of Kupchee or Kiáhtsze 甲子港, if to so slight a curvature we can apply the name of bay. An arm of a river here disembogues, and on its banks, a short distance up, stands the town of Kiáhtsze. "Cupchee," says Mr. Lindsay, when visiting it in the "Lord Amherst," "is a walled town of some magnitude, and the river admits the entrance of large junks. Three war-junks of the largest size were lying here. * * * The general appearance of the coast (he adds) is barren and arid in the extreme. Little or no rice is cultivated; but the ground yields wheat, Barbadoes millet, various kinds of vegetables, and sugar cane. One of the principal productions appears to be salt, which is made by the evaporation of sea-water. Numerous salt-pans are to be seen in the vicinity of all the towns along the coast; they are laid out in plots of about fifty feet square, and paved with small red stones, which give them a neat appearance."

Beyond Kiáhtsze, as we approach Breaker Point, called we think on Chinese maps Lienhwa fung 蓮花峰 *i.e.* Water Lily Pt., we find an extensive sandy beach, slightly curved. At the deepest part, a small stream falls into the sea. On the left bank of it, a little way up, is Shin-tsiuen 神泉 *i.e.* Divine-fountain, a large town, with numerous fishing-boats. A few miles further on, in lat. 22° 56' 45" N., long. 116° 31' 30" E., is a low and rocky point, having within it some hummocks of black rock and red sand. The distance is about 23 miles from Kiáhtsze, and nearly 50 from the Great Lema. This is Breaker Point. "The coast for several miles is here," says Mr. Lindsay, "one continued mass of sand; two hills of peculiar appearance, and nearly 400 feet high, were half covered with the sand, which looks like drifted snow."

Immediately after rounding Breaker Point, we pass a small town named Ching-hai 靖海 or rather Tsinghai. This is not the district town of Chinghai, which is farther to the northward, and is a large commercial place. It was near this place, at the fortress of

Cape of Good Hope. Towns beyond Breaker Point. Changlin. Namoh I.

Tsing-hii-so in the district of Hwuilái, that the boat's crew of H. B. M. steamer "Madagascar" landed Sept. 20th, 1842, after her destruction by fire, and were taken prisoners by the Chinese. A little north of Tsinghai is the entrance of a small river, named Hai-mun 海門 or Haimoon, a naval station, and a place of some trade, which was visited several years ago by vessels engaged in the opium trade, but without success. The Cape of Good Hope lies to the northeastward of this, in lat. $23^{\circ} 13' 45''$ N., and long. $116^{\circ} 50'$ E.; this headland is, we believe, near to Kwang-gaou, or Kwong-o 廣澳 on Chinese maps, but on the charts it is called Ma-urh Pt. In the roadstead, protection can be obtained from northerly and westerly winds, and if close in, from easterly winds also. The character of the land from Breaker Point to this place is mountainous and rocky.

The various ports to the northeastward of the Cape of Good Hope, in Kwangtung province, have not been frequented by foreigners. The largest towns in this part are Kiehyang 揭陽 Chinghai 澄海, Haiyang 海陽, and Jáuping 饒平. The town of Kiehyang is situated on an island, formed between two branches of a river, at a distance of several miles from the sea. Chinghai or Tsinghai is to the southeast of it, and is the chief town of a small district which the sea almost surrounds. Changlin, 樟林 *i. e.* Camphor Forest, within the jurisdiction of Chinghai, is represented as one of the chief places where Chinese junks are built. Haiyang and Jáuping are at nearly the same distance from the sea as Kiehyang, namely about 25 or 30 miles, and are to the eastward of Changlin.

The island of Namoh, or Nan-gaou 南澳 lies to the northeastward of the Cape of Good Hope, and to the southward of most of the places we have just named. It is thirteen miles in length, and three miles in average breadth, and consists of two high mountains of unequal extent, connected by a low isthmus. Namoh is a naval station. The civil jurisdiction is divided, the northern portion of the island pertaining to Kwangtung, and the southern to Fuhkien; but the whole naval force is under one officer, whose authority extends to both sides of the island. The chief town is Nantsze or Shin-ao 深澳 in a bay on the north side, near the eastern end, and here the naval officers usually reside. The eastern point of the island is in lat. $23^{\circ} 28'$ N., long. $116^{\circ} 59' 30''$ E. Off the eastern and south-eastern sides of Namoh lie several small islets and rocks. The Lamock islands, or Nan-pāng 南彭, and the Chelsieu or Che-t sien (Tseihsing shan 七星山) rocks, are the best known.

<i>Cone Islet.</i>	<i>Sugar Loaf.</i>	<i>Swatow.</i>	<i>St. Joachim's Bank.</i>
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Section 2.

FROM THE CAPE OF GOOD HOPE TO HAETAN STRAITS.

Surveyed by Capt. R. Collinson, C. B., R. N.

CAPE OF GOOD HOPE. The Cape of Good Hope is in lat. $23^{\circ} 14' N.$ and long. $116^{\circ} 47' E.$, forming the western extremity of the Bay of Namoh: it is 480 feet above the level of the sea—the highest part having the appearance of a dome. The eastern face of it is steep to, and in the bay to the north of it is a green islet, with a patch of rocks between it and the Cape. From it the west point of Namoh bears NE. by N. $14\frac{1}{2}$ miles, and the SW. part of the Lamock islands S. $85^{\circ} E.$, $24\frac{1}{2}$ miles.

Cone Islet. North from the Cape, $2\frac{1}{2}$ miles, is Cone Islet, which is distant from the main land five cables; and S. by E. four cables from Cone Islet, a square rock, having a reef, which shows at low water, two cables to the westward of it. Rocks extend from the points on the main opposite to these two islets, and in the channel there are three fathoms at low water.

Sugar Loaf. From Cone Islet the coast trends NW. by N. three miles to Sugar Loaf Island, from the NE. point of which there is a reef extending one cable.

River Han. From the Sugar Loaf the coast trends westward, being the entrance to the River Han, which has $2\frac{1}{2}$ fathoms over the bar at low water.

Intending to enter it, steer so as to pass two cables to the east of Double Island (which bears NW. by N. $\frac{3}{4}$ of a mile from Sugar Loaf); having passed it, the course is west for the town of Shantau or Swatow, which is upon the north bank of the river and four miles from Double Island: half a mile to the SE. of the town, there is a depth of 8 fathoms, and at low tide, the water is fresh in the rainy season.* The channel between Double Island and the main to the northward is five cablest wide, the mud extending six cables from that shore, which is low.

St. Joachim's Bank. St. Joachim's Bank is an extension of this flat southeasterly. The southern edge in two fathoms bears east from Double Island two miles, and it turns to the northward when the Pagoda bears N. $27^{\circ} E.$ A good guide to steer clear of it in a vessel of 14 feet draft, is to keep Brig Island open of the east end of Fort Island.

* Shantau 山頭 or Swatow, is the seaport of Chinhái hien, from which it is distant about two miles. The country in this vicinity is very highly cultivated, and large quantities of tobacco and sugar cane are raised. Of late years, many coolies have been taken from this place.

† A cable is one tenth of a mile.

<i>Pagoda.</i>	<i>West Entrance to Namoh.</i>	<i>Brig I.</i>	<i>Baylis Bay.</i>
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Pagoda. The Pagoda bears N. 8° E., $10\frac{1}{2}$ miles from the Cape of Good Hope. The land in its neighborhood is so low that when first made, it appears like an island.

Fort Island lies NE. by E. two miles from the Pagoda. The fort is on the table land at its west extreme.

Knolls at the western entrance to Namoh. S. 63° E. from the Pagoda, $4\frac{1}{2}$ miles, and with the west point of Namoh in line with Breaker Island bearing N. 36° E., there was formerly a shoal with only eleven feet at low water; at present (August 1844,) there are several knolls, none of which however have less than 13 feet.

The following are their bearings. The west point of Namoh in line with Breaker Island is the mark for three. The western upon that line bears from the Pagoda S. 56° E., and has a depth of 13 feet at low water. Another bears S. 66° E. from the Pagoda, with 17 feet. A third bears east from the Pagoda, with 18 feet. And with the Pagoda bearing N. 79° W., and the west point of Namoh N. 21° E., there is a patch with 18 feet. Also with the Pagoda bearing west, and the west point of Namoh N. 23° W., is a knoll which has only 14 feet: all these are sand, and will probably be found to shift in consequence of the freshes from the mouths of the River Han.

Brig Island. Brig Island (so called from a rock at its southern extremity, which appears like a brig when seen in an east or west direction), lays NE. by E. $\frac{1}{2}$ E., 4 miles from Fort Island; the depth of water varies from 5 to $2\frac{1}{2}$ fathoms between the two, the most water being towards the former.

Baylis' Bay. Baylis' Bay is the first bay on the north side of Namoh to the eastward of the west point, and has a Chinese fort on the ridge to the westward of it, and an outwork on the beach.

There are three knolls off the Bay, bearing from the upper fort as follows:—1st. N. 78° W., rather less than a cable from the fort point, having only five feet over it.—2d. N. 43° W., one cable from the point, and nine feet upon it at low water.—3d. N. 36° W. $2\frac{1}{2}$ cables from the same point; when upon this, Brig Island summit bears N. 40° W. and Fort Island summit S. 75° W. It has eleven feet at low water. During the northern monsoon, the opium vessels anchor off this bay, remaining here from October to May. In the other monsoon they lay $1\frac{1}{2}$ mile further to the east, as the swell setting round the point renders this anchorage inconvenient.

From Baylis' Bay a bank commences, which extends $2\frac{1}{2}$ miles along the NW. coast of Namoh; the greatest distance from the shore is four cables, which is opposite to Stewart's house, off which is the summer anchorage: the lead gives no warnings, and there is only nine feet on the edge of the bank. The tide at springs runs at the rate of four knots, the ebb coming from the eastward. It is high on full and change days, at 11 o'clock, rise seven feet. These two anchorages must be considered more as safe roadsteads than harbors, as from the velocity of the tide and the fetch from the sea, laden boats would frequently have much difficulty in passing to and fro.

<i>Folkstone Rock.</i>	<i>Pagoda Bay.</i>	<i>Challum Bay.</i>	<i>Entrance I.</i>
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Water may be procured with great facility, and there was no difficulty in obtaining fresh provisions.

Folkstone Rock.—The Folkstone Rock has only five feet upon it at low water. The bearings from it are:—the Brig Rock in line with the NW. head of Fort Island S. 62° W.; Coffin's Island, the largest of a cluster of islets three miles north of Brig Island, N. 44° W.; and the flag-staff of Stewart's house in line with a whitewashed rock at the back of it bearing S. 11° E.

The leading mark, Brig Rock, in line with Fort Island, will keep a vessel clear of the shoal, which extends nearly all the way from Brig Island to Breaker. The latter bears from the former N. 63° E. 4.8 miles, and is a peaked rock, with several others about it, which must not be approached nearer than two cables upon their western side. Opposite to Breaker, the coast line of Namoh trends to the southeast, forming a deep indentation, which is shoal with two islets and several rocks in it. The land at the bottom of the bay is low, and it is only one mile across to the southern side of the island.

Shoal east of Breaker. To the eastward of Breaker I., the southern edge of the shoal, from the north shore in three fathoms, bears east three miles from it.

Pagoda Bay. Pagoda Bay is seven miles to eastward of Breaker; there is a walled town at the bottom of the bay, which is the residence of the magistrate of the district. Vessels drawing less than three fathoms may bring the Pagoda to bear E. by N., but during the northerly monsoon, Challum Bay will be found a more eligible anchorage, as with a northeasterly breeze there is a considerable swell into the former, and from Challum Bay you are able to avail yourself of the land wind, which usually draws to the northward in the morning.

Challum Bay. To enter it, pass within $\frac{1}{2}$ mile to the westward of Middle Islet, which is a barren rock bearing N. 60° E. 5.3 miles from Breaker, or do not shut Back Bay Island in with Entrance Island, which will prevent your standing into less than $2\frac{1}{2}$ fathoms upon the western shore.

Entrance Island bears NW. 2.4 miles from Middle-Islet. The anchorage is between the two, in from 3 to 6 fms. The bay north of Entrance Island is shoal, and there is a reef extending three cables from the SW. point of Challum Island; the latter lays north $1\frac{3}{4}$ mile from Middle Islet. Should you pass to the eastward of Middle Islet, it must be within five cables, as there is an eleven feet patch between it and the Fort Head, bearing from the former N. 43° E.

Under Fort Head is a rock nearly level with the water's edge at high water, and also one in the bay between it and Point Difficult; otherwise the coast line here is steep to.

Point Difficult. Point Difficult has a square fort upon the highest part of the hills over it, and an islet to the eastward of it.

Ternate Rock. The Ternate Rock, with one foot upon it, lays N. 78° E. 1.3 mile from the summit of this islet; on which bearing it is

Ternate Rock. South Coast and Bay of Namoh. Crab I. Lamock Is.

in line with the third and last sandy hill on the northern part of the range extending from Fort Head. The Pagoda Island in line with Namoh High Peak, will place you to the eastward of it.

The north point of Namoh has a double peak over it, and forms the eastern boundary of the Pagoda Bay; rocks extend from its northeast face three cables. The land then trends immediately to the southward.

South coast of Namoh. The southern coast of Namoh runs from the west point nearly due east five miles, where there is a small bay with a pagoda upon its eastern point. This portion of the island corresponds with the bay opposite to Breaker on the northern shore.

South Bay. South Bay lays four miles to the eastward of the Pagoda Bay, and will afford good shelter in the NE. monsoon. Rocks extend $1\frac{3}{4}$ cables southerly from the point. Vessels of 18 feet draught may run into this bay, until the end of the point bears southeast.

Crab Islet. Five and a half cables to the SE. of the point, is a low flat islet, called Crab Islet by the Chinese. The channel between it and Namoh has foul ground. One and three tenths of a mile to the eastward of South Bay Point is a bold bluff, with three tall chimneys on it, which is the southern extremity of the island.

Lamock Islands. The Lamock Islands are four in number, and two patches of rocks extending in a NE. and SW. direction $7\frac{1}{2}$ miles. The southwestern part of the group is two square rocks, about the size of boats, with several detached reefs between them. The White Rock lays NE. 1.4 mile from them, and is sufficiently large to afford shelter to the fishing-boats. Between the White Rock and the High Lamock, the distance is three miles, affording a safe channel, the depth of water varying from eight to fourteen fathoms. High Lamock Island is 250 feet above the sea, and thickly covered with brushwood. The channel between it and the next island is 1.3 mile; between the two is a rock, with a reef which shows at low water, extending southerly from it.

The three northern islets lay close together; the northern one is without vegetation, and has a pyramid upon it. The course from the southern end of the Lamock to the west point of Namoh is NW. $\frac{1}{2}$ W., $22\frac{1}{2}$ miles; and from the NE. end of them the east point of Namoh bears NW. $13\frac{1}{2}$ miles. From the same point the southeastern Brother bears N. 56° E. $25\frac{1}{4}$ miles, and Jokakko Point N. 21° E., $19\frac{1}{2}$ miles.

Between the Lamock Is. and Namoh are four islets, the northern of which is the highest, and from its appearance is called Dome Islet.

The two southern islets lay nearly E. and W. of each other. The southeastern, or Reef Islet, has a reef of rocks extending southerly one mile from it, from the south end of which the Southwest islet bears N. 51° $30'$ W. The western islet is lower than the others and flat; its SW. extreme, open of the west end of Southwest Islet, is a good mark for avoiding the above reef.

<i>Sinta.</i>	<i>Yingkonta.</i>	<i>Dome I.</i>	<i>Chelsieu.</i>	<i>Dioyu.</i>	<i>Chauan Bay.</i>
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Sinta is a rock with two feet water on it, bearing S. 38° E. 4.4 miles from Dome Islet. When on it the SW. extreme of Reef Islet in line with centre of West or Low Islet, bearing N. 67° 30' W., Southwest Islet summit bears N. 72° W.; east point of Namoh N. 10° 30' W.; southern rock of the Lamocks S. 28° E.; north end of the Lamocks east; and the highest point of the Lamocks is S. 71° E.

Yingkonta is another rock, awash at low water, 4½ miles to the north of *Sinta*. When upon it, the northern end of Crab Islet, on the south face of Namoh, is in line with the SW. point of Namoh, bearing N. 77° W., Dome Island bears S. 74° 30' W.; Reef Island S. 51° 30' W.; High Lamock S. 37° E.; and the east end of Namoh N. 29° W. The north point of Namoh, seen clear of the eastern point, leads you north of it.

Reef between Dome Island and Namoh. There is also a patch of rocks which show at half tide, between Dome Island and Namoh, bearing from the former from N. 12° to 27° E., one mile. The Chimney Bluff on Namoh bears N. 33° W. from them. They are rather more than a mile from the Namoh shore. Mr. Anderson, master of the "Sir Edward Ryan," also informed me of a reef which he saw when in command of the "Times" schooner, to the NE. of the Lamocks, which he described as being just awash; the bearing placed it with all the Lamocks in one, and three miles from the northern rock. We, however, could not find it.

Chelsieu. Chelsieu is a cluster of four rocks, which are always above water, bearing E. from the north point of Namoh seven miles.

Dioyu. From them N. 35° W. 3½ miles, is Dioyu, a reef which is just awash at high water. The pagoda in Pagoda Bay, in line with the Saddle Peak which overlooks the western side of Pagoda Bay in Namoh, bearing S. 63° W., will lead you to the northward of it, should high tides and smooth water prevent its being seen.

Tides at the eastern extremity of Namoh. The flood tide enters at the eastern as well as at the western end of Namoh, but the tides in the neighborhood of Pagoda Bay are not so strong as they are at the western extremity of the island.

General description of Namoh. Namoh is 12 miles from E. to W., and 5½ miles from north to south at its eastern extremity, which is its broadest part. Notwithstanding its barrenness it is exceedingly populous, the occupation of fishing affording a livelihood to the greater portion of the inhabitants. The peaks, of which there are three, rise to the height of 1700 and 1900 feet above the sea, forming the most prominent landmarks in the neighborhood.

Six and a half miles ENE. of Point Difficult is a shallow bay, with a pagoda on an island within it; the boundary of the provinces of Kwangtung and Fuhkien passes through this bay.

Chauan Bay. The west point of Chauan Bay (which is the eastern point of the bay mentioned above) has a small islet off its south extreme. This bay may be useful during the SE. monsoon, but in the NE. vessels should endeavor to reach Owick Bay, which

Owick or Psyche Bay. *Jokakko Peak.* *Cone Peak.* *Tongsan Harbor.*

is seven miles further to the eastward, as the other runs far enough back to the NE. to allow an awkward sea to rise. At the entrance is a middle ground with $2\frac{1}{2}$ and 3 fms., the south end of which bears N. 80° W. from east Chauan Point; the west end S. 11° E. from Pagoda Bay, and the east end S. 21° E. from the same.

Three cables from the SW. point of Square Islet (the southernmost islet in the bay) is a reef awash at low water. When upon it the east point of Chauan Bay bears S. 60° E., and the west end of Square Island N. 33° E. The shoal water also extends 1.1 mile from the NW. side of the bay, which will be detected by the discolored water. Anchorage in six fms. will be found with the centre of Square Island bearing SE.; and further up the bay in three fms. with the south end of High Island in line with the east point of the bay. Between High and Square islands and the east point of Chauan Bay, the channels are too narrow for square rigged vessels.

Owick Bay. Owick or Psyche Bay lays three miles to the east of East Chauan Point. It is protected by a narrow isthmus with two rocks off its south extreme, the end of which may be brought to bear SE.; where a vessel will have smooth water in $3\frac{1}{2}$ fathoms. Immediately to the east of Owick Bay is a remarkable sand hill, which will point out its position.

Jokakko Peak. Jokakko Peak is the highest part of the land at the back of Owick bay, and is conical shaped. Bell Island lays three miles to the east of Owick Bay point, and is perforated at its south end, which will be seen on a SE. or NW. bearing. There is a smaller islet between it and Jokakko Point, making the channel five cables wide, in the centre of which there is only $2\frac{1}{2}$ fathoms; from Bell Island, the Southeast Brother bears S. $28^{\circ} 30'$ E. $15\frac{1}{2}$ miles.

On Jokakko Point is an isolated hill, N. by E. $1\frac{1}{2}$ mile from Bell Island; off it are two islands, Cliff Island bearing SE. by E. one mile, and the Square Head N. 76° E. 1.7 mile. The channel between them and the Point is safe.

Cone Peak. N. 30° E. from Jokakko Point is Cone Peak; with a peaked rock off its eastern point. The land between the two is a sandy plain, very little above high water level; the distance across which to the bottom of Challum Bay is only $1\frac{3}{4}$ mile.

Brothers. The Southeastern Brother is the larger of the two, and has a reef extending northwesterly from it. The islets are $2\frac{1}{2}$ miles apart, bearing SE. $\frac{1}{2}$ E. and NW. $\frac{1}{2}$ W. from each other; the northwestern has a remarkable square top.

Tongsan Harbor. Tongsan Harbor is one of the best upon the coast of China, and will be easily recognised by a remarkable peak called "Fall Peak," making something like a saddle, but with a deeper indentation; and upon the island at the entrance is a pagoda, which bears from the Southeast Brother N. 55° W., $14\frac{1}{4}$ miles.

There is a mud bank outside, having for its least water $3\frac{3}{4}$ fathoms, bearing from the pagoda S. 40° E., and from Fall Peak S. 35° W. By keeping the Sisters, two islets in the northern portion of the bay,

Old Thunder Head.	Fall Peak.	Tungyung town.	Rees' Rock.
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open of the east end of Middle Islets (the group immediately north of Pagoda Island or Tung-shán Ying, 銅山營), you will be to the eastward of the bank.

Pagoda Island and the eastern shore of the harbor are steep to, until you open the low isthmus which connects Old Thunder Head with Fall Peak, when the eastern shore becomes shoal; and the larger Sister must not be brought to the westward of N. by W. $\frac{1}{2}$ W.

There are also some rocks extending a cable and a half from the south point of Middle Islet, and a mud bank extending northerly $1\frac{1}{2}$ cable from its east point.

The Plover's first anchorage was in $4\frac{1}{2}$ fathoms, with Fall Peak bearing N. 73° E., and the larger Sister N. 19° W., under a long sandy point and opposite to a creek. Afterwards for the convenience of watering, which was readily obtained, and that during the dry season, she was moved under Old Thunder Head; the Fall Peak bearing N. 44° E. and the east head of Middle Island N. 52° W. Old Thunder Head is called by the Chinese *Káu-lí-táu shán*, 高麗頭山 *i. e.* High-fair-head hill.

Junks anchoring for the tide bring up between the pagoda and Middle Islands. In passing to this anchorage care must be taken to avoid some rocks extending southeasterly, two cables from the E. point of the northern part of Pagoda Island; and the best berth will be found in 12 fathoms, when the Sisters are seen through the western opening of the Middle Islands. You must not close the Middle Islands nearer than two cables, as there is a mud bank extending from them southerly. This anchorage is confined, but will be found convenient for a disabled or an unhandy vessel in case the ebb tide should prevent her reaching the other anchorage; and in the former case she would be nearer to the town of Tungyung, where spars are to be obtained. The latter is situated upon a peninsula opposite to the Pagoda Island; this channel is not a good one to enter by, as rocks extend from both shores, narrowing the channel to three cables.

It is high water at 11.30; rise and fall, 12 feet. The bay runs back NNW. 11 miles from Middle Island, where I think there is a river's mouth, the boat having three fms. water at the farthest point reached in the channel, but that was very narrow. Also due west from Fall Peak there is a boat channel leading into Challum Bay. The northwestern portion of the bay is bounded by a range of rugged mountains, called Greene's Range, or *Níu shán* 牛山. In proceeding to the eastward, the coast on the eastern side of Old Thunder Head must not be approached within a cable, as there are three rocks which show at low water along it.

Rees' Rock. Rees' Rock bears S. 65° E. from Fall Peak, distant 1.7 mile; at spring tides it is covered at high water; when upon it, the Chimneys (or, as the Chinese call them, *Má-tsú kung* 媽祖宮, Mátsú's palace,) on the island which forms Rees' Pass bear N. 32° E.

<i>Rees' Pass.</i>	<i>Wreck I.</i>	<i>Dansborg I.</i>	<i>Ching Reef.</i>	<i>Goo Reef.</i>
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and the summit of the eastern islet of that group (Southeast. islet) N. 81° E. There is a rock east of it one cable, which only breaks at low water spring tides. The channel between Rees' Rock and the main is used by the junks, but it is narrow and the ground is foul.

Rees' Pass. In Rees' Pass there is a shoal with $2\frac{1}{2}$ fms. on it at low water, three cables from the shore of Chimney Island, bearing from the Chimneys S. 78° W. The Plover rode out a very heavy gale of wind, ranging from N.E. to E. by N., being anchored in six fms. two cables from the Black rock at the southern end of the sandy bay under the Chimneys; but I do not think that a vessel will gain anything by going through the Pass, as immediately on clearing the north end of Chimney Island, you are exposed to the same sea that you would experience to the eastward of the group. Anchorage also will be found under Southeast Island in five and six fathoms, with the south point bearing east.

Wreck Island. Wreck I. lays six cables to the N.E. of Southeast Island; off its eastern end are several rugged rocks, on the outer of which the "Simplicia" went to pieces on the 8th October, 1844, having struck upon a reef which shows at low water, and lays one cable N.E. of the same rock. In this neighborhood the sea rises very rapidly after the commencement of a breeze, and overtops, leading a seaman to suppose that there must be some change in the soundings.

Dansborg Island. Dansborg Island lays two miles to the N.E. of Wreck Island. It has three peaks which are nearly the same height, and is of an oblong shape, being six cables in a N.E. and S.W. direction, and $2\frac{1}{4}$ in width. To the WNW. of it, at the distance of a mile, and of one mile and four tenths, are two smaller islets.

Ching Reef.—The Ching Reef bears from the western of the two N. 19° W. 1.4 mile. It shows at half ebb, and when upon it the following are the bearings:—N.E. Head of Dansborg Island S. 51° E. The chimneys upon Chimney Island, S. 49° W. The Awota rock S. 72° W. Black Head on Hútau shán N. 10½° E. It is of some extent, the northeastern rocks which break only at low water being two cables from the highest part of the reef. The Awota Rock is called by the Chinese *Shih-yáh-mú sz'* 石鴨母土.

The *Goo Reef* which shows at the last quarter ebb, bears S. 69° W. from it. The bearings upon it are:—the chimneys upon Chimney Island S. 41° W. Awota rock S. 81° W. Summit of Wreck Island S. 35° E. Western Islet off Dansborg Island S. 82° E. The Awota Rock mentioned above lays close to the main, to the N.W. of Rees' Pass, bearing N. 53° W. from Chimney Island.

Hútau shán Head lays six miles north of Dansborg Island. It is composed of five separate hills, the southern of which, "Black Head," is the most remarkable. Vessels might ride out a strong breeze under it in four fathoms, at the distance of two cables from the shore, particularly if the wind holds to the northward; should how-

<i>Hútau-shán.</i>	<i>Spire.</i>	<i>Nob Rock.</i>	<i>Red Bay.</i>	<i>Chinhai Bay.</i>
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ever a gale come on, or the wind draw to the eastward, the sooner this anchorage is quitted the better. Under such circumstances, refuge may be had by running through Rees' Pass, and anchoring close under Chimney Island, or in Tungshan harbor.

On the northern of the five hills is a walled town; Hútau shán river has deep water when inside, but it is not available for navigation without buoys, as the channels are narrow and intricate; a spit extends three miles southerly from Hútau shán 虎頭山, some parts of which are dry at low water; the eastern extreme of it bears S. 68° W. from Black Head.

Hútau-shán to Red Bay. The coast line from Hútau-shán to Red Bay lays NE. $\frac{1}{2}$ E., the distance being $10\frac{1}{2}$ miles, and with the exception of one hill and two hillocks is a sandy plain. To the eastward six cables from Hútau-shán Point, are some rocks, a portion of which are always uncovered.

Spire. To the NE. of the Point is a rock with a remarkable square column on it, called "Spire," and a low flat rock to the westward. N. by E. one mile from Spire is Cleft Rock, which must not be approached within three cables, as reefs lay off it to the east and northeast.

Nob Rock. Nob Rock bears from Black Head east, and from the east head of Red Bay S. 15° W. being $5\frac{3}{4}$ miles from the nearest shore; it is steep to.

Red Bay. In working up to Red Bay or T'siáng-kiun T'siau, 將軍礁 from the southward, care must be taken to avoid a reef, laying six cables N. by E. from the low hill on the shore, three miles to the southward of the anchorage. When upon the reef, the eastern Black Rock bears N. 53° E. By tacking when the Black rocks are in one with the point beyond them, you will be one third of a mile to the eastward.

Red Bay will be readily known by the two Black rocks off the point, as well as by the low red sand hills at the back of it. A reef extends northwesterly from the southern of the two rocks, leaving a passage only for small boats between it and the main at low water. S. 55° E. seven cables from the southern Black Rock, is a reef which is covered at high water. The anchorage lays between the two, and the reef has three fms. close to it. The water shoals gradually on going in, after having passed the rocks. It will be found a very good roadstead in the northern monsoon. There is a village and a creek in the bottom of the bay.

Red Bay to Chinhai Bay 鎮海. From Red Bay to Chinhai Bay the distance is 18 miles, the coast trending NE. by N. It is steep to, with the exception of the NE. point of Red Bay, and of some reefs and a sand spit which lay west from Lamtia, and to the southward of a low hill with a house on its summit, where there is a bay in which the water runs a long way back, but it is shallow. From Red Bay, Chapel Island bears ENE. $21\frac{1}{2}$ miles, and Lamtia NE. $\frac{1}{2}$ E.

<i>Wú-siú-shán.</i>	<i>Woan I.</i>	<i>Hú-í Tau Bay.</i>	<i>Reef near Dodd's I.</i>
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10½ miles. The west point of Amoy Bay is three miles NE. by E. from Chinhai Point; between the two, and five cables from the shore, is a rock awash at high water; and four cables north of the point is a reef, which shows at low water.

The island of Wú-siú-shan bears N. 17° E. four miles from the Point; nearly midway between the two is a rock which is covered at high water. From it the High Pagoda bears N. 62° W.; the tides in its vicinity are strong, therefore give it a wide berth.

The distance between Wúsiú and Woan (the islet west of it) is five cables, forming a secure but somewhat confined anchorage, which is now much resorted to. The best passage is to the north of the former, and between it and Chinseao. The water is shoal off the northwest point of Wúsiú; the lead will however give you warning. There are usually a number of fishing stakes which obstruct the southern passage, and it should not be used except with a commanding breeze and at slack tide. The centre and eastern channels should be preferred to the western.

In navigating this portion of the coast during the northeasterly monsoon, the breeze will be found to hang to the northward from 2 to 10 A. M., and in the eastern quarter the remaining period. And deeply laden vessels will find it more advantageous to seek shelter in one of the harbors or roadsteads abovementioned during a strong northeasterly wind, than to keep the sea, as ground can seldom be gained, in consequence of the perpendicularity of the seas.

Hú-í Tau 圍頭 Bay. Owing to the uncertain set of the currents in the Formosa channel, several vessels have mistaken this bay for the Harbor of Amoy. The following remarks will point out the difference in the approach:—

The entrance to Hú-í Tau and Amoy compared.—Dodd's Island, called by the Chinese Pakting, is in lat. 24° 26.6 N., and long. 118° 29.4 E., and may be known from Chapel Island by a reef three cables to the NNE. of it, on which the sea always breaks; the former also is uneven, gradually sloping to the eastward. Chapel Island rises suddenly, and there is a difficulty in saying which is the highest part of it; it is eight miles from the nearest land, Dodd's island being only three.

The entrance to Amoy, viz., from Chapel Island to the south point of Quemoy, is 11 miles, but from Dodd's island to Hú-í Tau Point is only five miles. The rocks off the south point of Quemoy are peaked, the reef off Hú-í Tau Point is flat.

There are two pagodas on Quemoy Point, which extends NW. by N. and SE. by S. On Hú-í Tau Point is a small obelisk, and the land turns suddenly to the north.

Hú-í Tau bay will afford very good shelter in the northeast monsoon, as the point may be brought to bear SE. by E. in 3½ fathoms; and vessels drawing less than three fathoms may bring it to bear SSE.

Hú-i Tau Point. Oyster I. Thalia Bank. Flat I. Channel by Quemoy.

Reef off Dodd's Island. There is a rocky ledge from E. by N. to E.NE, 1.2 mile from Dodd's Island; on it are two patches, one of which breaks, and the other has only one fathom at low water. The eastern extreme of the land seen to the northward, bears N. 43° E. from its eastern edge. North of Dodd's Island, one mile, and on the same bearing 0.7 of a mile, are two rocks with only three feet at low water; and N. 60° W. five cables, is a reef which will show at half tide.

Hú-i Tau Point. Hú-i Tau Point is low, about 80 feet above the sea; on the hills north of it is a small fort, and a remarkable nob at the north head of the bay as you enter. The reefs extend S. 40° E., three cables from the Point; also from the first point inside, they extend westerly two cables. There is a sunken rock, with 20 feet water upon it, bearing S. 56° E. from the Obelisk 1.3 mile, and N. 48° E. from Dodd's Island.

Oyster Island and Rock. Oyster Island is a low flat rock N. 47° W. two miles from the Point; vessels running in for shelter will find smooth water between them, taking care to avoid the Oyster Rock, which shows at low water spring tides, and bears from the island S. 2° E. 9½ cables; when on it the Obelisk on the Point bears E. 27° S.; the fort N. 67° E.; and the summit of a flat island is in line with the left slope of a conical hill in the bottom of the bay, bearing N. 70° W.

Thalia Bank. The east end of the Thalia Bank bears W. ½ S., 2.1 miles from the Point, and N. 16° E. from Dodd's Island; it extends nearly to the White rocks in the centre of the bay, the east end having 1½ fathom on it; its western end dries. The NE. part of it is steep to, the lead giving no warning.

Anchorage west of Oyster Island. There is anchorage also to the westward of Oyster Island in five fms., but it must not be brought to bear to the southward of east, as there is a rocky ledge with only one fathom on it seven cables from the island.

Anchorage off Flat Island. Vessels requiring shelter in a southerly breeze may run up and anchor to the NE. of Flat Island, at the distance of half a mile; it bears W. by N. 5½ miles from Oyster Island. The northern edge of the Thalia Bank bears S. 69° E. from Flat Island; do not bring it therefore to the westward of N. 69° W., and keep Oyster Island open to the northward of the fort, to avoid the shoals on the northern shore of the bay.

Channel between the Thalia Bank and Quemoy. There is a channel between the Thalia Bank and Quemoy, but the ground is foul with several reefs, and should not be attempted without the chart or some previous knowledge. A leading course to clear the south end of the bank, is the Chimneys on the north point of Quemoy bearing W. by N., until the White rocks bear N.NE., when a course must be steered to pass half a mile from the points of the bays on the Quemoy shore. In the west end of Hú-i Tau Bay are two remarkable sharp peaks, which form good leading marks from the sea. The

<i>Chimmo Bay.</i>	<i>South and Pagoda Is.</i>	<i>Reef.</i>	<i>Town of Eng-lang</i>
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eastern is 1390 feet high, and is in latitude $24^{\circ} 40.5$ N. and long. $118^{\circ} 22.5$ E.

Fresh Water. Fresh water can be obtained under the fort at the Point. The ten miles of coast line between Hú-i Tau and Chimmo Bay is low, the sand hills being about 300 feet high. There are two walled towns between the two, the southern of which has a small pagoda near it. None of the small sandy bays afford shelter, the boats being all hauled up on the beach; six miles from Hú-i Tau Point, and three from Pagoda Island, is a peak with three chimneys on it.

Chimmo Bay. Chimmo Bay will be easily recognized by the Kú-sau táh, 姑嫲塔, or Chimmo Pagoda, which is 760 feet above the sea, and is in latitude $21^{\circ} 43'$ N., and longitude $118^{\circ} 33.6$ E. It is 1.8 mile from the beach at the north head of the bay.

South and Pagoda Islands. On the southern side of the bay are two islets, South Island and Pagoda Island, the channels between which, and between Pagoda Island and the south of the bay, are full of rocks.

Reef. N. 4° W. from South Island, 6 and 7 cables, are two rocks, which show at low water spring tides. When on them the east end of Pagoda Island is in line with a flat reef outside the south end of the bay. To pass to the northward of them, keep a large tree, half a mile from the beach in the northwest part of the bay, open to the left of the north fall of a remarkable Shoulder peak, which it will be bearing N. 45° W.; and also when Point Island is in line with the east end of the first point beyond it, you will then be to the westward of them. From the reef to Point Island is 1.2 mile; the latter is steep to, but there is a reef which covers at half tide W. 9° S., three cables from it. The water shoals gradually, and vessels drawing 15 feet or more must not bring the Point Island to the southward of E. 9° S. This bay at the best is but a roadstead, and a dangerous one in the southerly monsoon. The walled town of Yung-ning or Eng-lang 永寧, is at the northern side of the bay, and Chimmo on the southern, with large villages along its shores, the inhabitants of which do not bear a good character.* There is a large fleet of fishing-boats belonging to this bay, and their nets will be fallen in with six miles from the shore, all the way from Hú-i Tau to Chinchew.

Coast line towards Chinchew, or Tsiuenchau fú, 泉州府, the department of Tsiuen-chau, or Chinchew.—The coast toward Chinchew Bay trends northeasterly, the distance from Point Island to Chinchew Point being eight miles. Several sandy bays occur which afford shelter to junks, but being shoal will only be of service to vessels of their draught. From Chenchí or Tsiángchí, 祥芝,

* The piracy on the "Omega" and "Caroline" in 1847 is an instance of their daring character.

Directions into Chinchew Bay. Pisai. Rocks off Passage I. Boot Sand.

1½ mile, is a small islet in a bay, with a building like a bell on it. Chenchí Point is about 400 feet above the sea, and forms the south end of Chinchew Bay. Sunken rocks extend from it two cables to the eastward; it is in latitude 24° 45' N. and longitude 118° 44.7' E. The course hence into Chinchew Bay is north until Cho-ho (Jih-hú, 日湖) Pagoda is shut in with Siáu-toi, when it may be steered for.

Directions. The following directions will take you over the bar into the anchorage south of the Boot Sand, and the position and description of the dangers will follow:—being half a mile to the southward of Passage Island, steer for the south end of Ta-toi (or Ta-túi, 大隊, Great Army) which will be known by its being the highest island in the neighborhood. When you are within three cables of it, edge away to the southward, passing to the eastward of Siáu-toi (or Siáu-túi, 小隊 Small Army,) a low barren islet, at a cable's length. Haul to the westward round it, keeping at the same distance from high water mark. When Siáu-toi west summit is in line with Ta-toi summit, you are in the narrowest part of the channel, which here is barely a cable wide at low water. Having passed Siáu-toi, a WNW. course will take you up to the anchorage above Pisai in mid-channel. By keeping this islet to the westward of N. 73° W., the rock off Cho-ho Pagoda will be avoided; and by not bringing Siáu-toi to the southward of S. 62° E., the knee and toe of the Boot will be avoided. The outline of this bank is however generally visible. The anchorage is north of Pisai 1½ or 2 miles, where the channel is three cables wide.

Rocks off Passage Island. There are three rocks to the eastward of Passage Island, which cover at high water. The southeast of the three bears E. 8° S., ½ mile from the island. There is also a ledge extending from its southwest point 1½ cable; N. 40° E. from Passage Island are two White rocks, always partly uncovered; the channel between the two is unsafe. To the northward of the White Rocks is Táh-kuh, 獺窟, an island at high water, with a large town upon it; there is a sunken rock between them, bearing from the highest part of the northern White Rock N. 17° E., and is distant five cables from it; the summit of Ta-toi bears from it S. 71° W.

Anchorage north of the Boot Sand. Vessels intending to anchor to the northward of the Boot Sand, must steer to pass north of Ta-toi, which is distant three miles from Passage Island, and if drawing less than three fathoms may run up until Cho-ho Pagoda bears south, when you will be about 1½ mile from the usual anchorage to the southward of the Boot. The north edge of the Boot will be avoided by keeping the White Rocks mentioned above, to the southward of east. With Ta-toi summit bearing S. 17° E., there is a half tide rock on the north side 1½ cable from the shore. There is good anchorage in 3½ and four fathoms, with Ta-toi bearing SE. by S. The Boot may be crossed by a vessel of light draught at high water,

Lynx Rock. Saheen Rock. Mid-channel Reef. Ota Rock. Pyramid Point.

but it should be sounded first, as the sands shift. A vessel drawing 11 feet is reported to have struck on a bank $1\frac{1}{2}$ mile easterly from Siáu-toi, but not less than $2\frac{1}{4}$ fathoms were found on it in March 1844. The southerly monsoon may however cause the sands to accumulate. Cho-ho Pagoda open to the north of Siáu-toi will place you in three fathoms on its north edge, and the south end bears S. 80° E. from Siáu-toi.

Lynx Rock. The Lynx Rock, with only six feet upon it at low water, lays S. 77° E., not quite five cables from the highest part of Siáu-toi; when on it Ta-toi summit bears N. 14° W., and Passage Island N. 62° E.

Saheen Rock. S. 11° E. two cables east from it, is the Saheen Rock, which shows at low water spring tides; when upon it Cho-ho Pagoda bears N. 87° W., and Ta-toi summit N. 14° W. The bottom between it and the rocks which lay S.S.W. from Siáu-toi is rocky and uneven, and in some places there are only six feet, but a channel through it is used by the vessels coming out of Chinchew, when the wind is too far to the eastward to permit them to fetch through between Siáu-toi and the Lynx Rock, by keeping the highest part of the rocks S.S.W. from Siáu-toi in line with Cho-ho Pagoda.

Mid-channel Reef. The Mid-channel Reef south of Siáu-toi is a cable's length from the SW. point of that island; it is two cables in circumference, and three rocks show at low water spring tides. The channel between it and the rocks south of it is rather more than half a cable wide; when on the reef, the west summit of Siáu-toi is in line with the highest part of Ta-toi. Rocks extend half a cable from Siáu-toi on its south, southwest, and eastern sides.

Cho-ho Reef. A sand spit extends easterly from Cho-ho Pagoda 1.2 mile, and the reef off it bears N. 52° E. 0.6 of a mile from the pagoda, and from the summit of Pisai S. 73° E.

Ota Rock. The Ota rock, which is also covered at high water, lays east from Pisai five cables, Cho-ho pagoda bearing from it S. 40° E.

Tsiuen-chau fú. The entrance of the Chinchew river bears N. 65° W., five miles from Pisai. The channels are shoal and intricate, the large junks being obliged to wait for high water; near the mouth, on the left bank, is circular fort, called Fáh-shih, 法石. The city is on the north bank of the river four or five miles above the fort.

Pyramid Point or Tá-tsih, 大峇, the northeastern horn of the Bay, is in lat. 24° 52' 2 N., and long. 118° 58' E., Passage Island bearing from it S. 73° W. 8.7 miles. Vessels requiring shelter during the NE. monsoon, will find it in the first bay west of the Pyramid, taking care to avoid a sunken rock one cable's length south of the first point to the eastward of the walled city of Tsung-wú, 崇武. The Pyramid Rock is connected with the point at low water; to the SE. is a rock which is never covered; and east of it are several rocks,

Town of Tsungwú. Matheson's Harbor. Mei-chau Sound, and Inner Harbor.

the outer of which bears N. 65° E. six cables from the Pyramid, and the highest part of the land forming the north side of Matheson's Harbor N. 11° E. A cliff head at the end of a promontory extending southwesterly from the hills mentioned above, in one with a remarkable cone in the bay bearing N. 16° W., will put you on it.

Matheson's Harbor, called by the Chinese Gúlai or Siáutsih 小岸, lies immediately to the north of Chinchew Bay, the isthmus near the town Tsungwú being only one mile across. The bay is four miles wide at the mouth, and will afford tolerable shelter to vessels drawing 12 feet, if the wind be to the northward of east; but it is only a roadstead, and that a bad one in the SE. monsoon. There are no dangers in it except a rock which lies north four cables from the largest islet on the south shore. The highest part of the north headland is in latitude $24^{\circ} 56.6$ N., and longitude $118^{\circ} 59.6$ E.

Mei Chau 湄洲 Sound is six miles across at the entrance, and will be known by the Nine-pin Rock, which lays in the centre near the entrance. South of it one mile is a cluster of rocks, one of which, Square rock, does not cover at high water: the outer part of the reef extends southwesterly, $1\frac{1}{2}$ cable from it. West nine cables from the Nine-pin, is a flat patch, which is level with the water's edge at high water; between this patch and Rugged Point, which forms the north head of the Sound, is good anchorage in the northerly monsoon. Rugged Point may be approached without fear except on its east side, from whence there is a reef rather less than a cable's length from the shore; $3\frac{1}{2}$ and four fathoms will be found at the distance of three cables from the sandy beach. N. 19° E. one mile from the Nine-pin is a rock which will be seen at low water, and it bears N. 60° W. from the highest part of Rugged Point. There is a passage between it and the Nine-pin, but rocks extend one cable in this direction from the latter.

Inner Harbor. In the southerly monsoon vessels will find a good harbor to the NW. of Saddle Island, called Chuhkán, 竹等, which bears NW. by N., $3\frac{1}{4}$ miles from the Nine-pin. Pass to the southward of the South islet off it, and haul to the northward round the Western islet, giving it a berth of a cable at high water to avoid a ledge. The ground is uneven hereabouts, and there are only $2\frac{1}{2}$ fathoms one mile to the WNW. of West Saddle Island. N. by E. from Saddle Island one mile is a low cliff islet, from the west point of which is a sand bank extending 1.7 mile to the northward. The south peak of Saddle I. being to the eastward of S.S.E. will avoid it.

Sand Bank, Mound Peak. When Mound Peak, called Siting hiáng 西亭鄉. (which is on the main, and is three miles north of the Saddle with a walled town and a pagoda near it), bears east, you are past the Sand Bank, and may haul in towards the town. N. 73° W., 2.4 miles from Mound Peak, is a bank with only one fathom on it. The junks use the channel between Mound Peak and the

Sand Bank. N. and S. Rock. Town of Ping-hái. Ockseu I. Lú-tsz' Reef.

Cliff Island, but it is awkward without a personal knowledge. They also pass to the northward of Nui-chau Island, but this channel has but nine feet and is strewn with rocks. The sound runs back ten miles to the northward of Mound Peak, forming narrow isthmuses between Ping-hái and Hing-hwa fú bays.

South Rock. South Rock bears W. $\frac{3}{4}$ N. 3.8 miles from Rugged Point; it is in latitude $25^{\circ} 23'$ N., and longitude $119^{\circ} 10' 6''$ E., being about 60 feet high, with a rock south of it three fourths of a cable.

North Rock. North Rock bears N. 34° E. 9.4 miles from the South Rock, and lies on the north side of Ping-hái Bay; it is 90 feet high and conical shaped, and is four cables from the shore. There is a sunken rock S. 57° W. $2\frac{1}{2}$ cables from it. The fort on the low hills west of the town bears N. 37° W. from it.

Ping-hái. Anchorage in three fathoms off the town Pinghái 平海 will be found with North Rock bearing SE. by E. Five miles west of the anchorage is a high range of hills, one of the peaks of which (Marlin-spike) will form a good guide for this part of the coast. The bay runs back past the foot of the Marlin-spike range, but is shoal, there being seldom more than two fathoms to the west of the range.

Ockseu or Wúkiú 烏坵. From the North Rock the highest part of Ock-seu bears S. 44° E., not quite 15 miles. From the South Rock Ock-seu bears S. 76° E., 15.9 miles; and from the Pyramid Point N. 76° E. 23 miles. It is in latitude $24^{\circ} 59'$ N., and longitude $119^{\circ} 29' 1''$ E.

Lú-tsz' Reef. From the North Rock the centre of Lútsz' 鷺鷥 bears E. SE., 5.8 miles; there are two sunken rocks between them which bear S. 59° E. from the North Rock, Marlin-spike being in line with it. When on them the northeast islet of Lútsz' is in line with the islet off the south face of Lamyet; they are 1.8 mile from Lútsz'. Reefs extend nearly one mile from the main to the northward of the North Rock.

There is a rock which shows at half tide N. NW., two cables from the NE. Lú-tsz', and another S. 9° W., 8 cables from it; the latter lays east from the summit of Lútsz'. The sand bank extends $2\frac{1}{4}$ miles southerly from the SW. point of the Lamyet. By keeping the west end of the island (which has three chimneys on it) to the eastward of north, its western edge will be avoided. There is also a rocky patch having only $1\frac{1}{2}$ fathom in some places: the east end of it bears S. by W. two miles from the east islet in the channel between Lamyet and the main. On its south edge the Chimney Point mentioned above bears N. 77° E.

Anchorage to the westward of Lamyet. The junks anchor under the first point south of the Chimneys, off which there is a rock which will always show. This will be found a snug anchorage for small vessels, as there is a considerable swell in the channel between Lamyet and the main with a northerly gale; care must be taken to round the rock at the point close, as there is a sunken rock in the

Lamyet I. Cliff I. Passage Is. Hing-hwá fú Sound. Fort Corner.

bay six cables to the southward of it, and the reef must not be brought to the westward of NNW., as the water shoals suddenly. Anchorage for large vessels will be found to the northward of the Chimney Point in four and five fathoms, the depth of water opposite the Point is from 12 to 15 fathoms. Vessels intending to pass to the northward and westward of the Lamyets ought to use the channel to the northward of Passage Islands (which are three in number, and bear NNE. five miles from the Chimney Point). Between the north point of Lamyet and the Passage Islands is Cliff Island, in the neighborhood of which are several reefs, rendering the channel between it and Lamyet, also between it and the Passage Islands, precarious.

A ledge extends westerly two cables from the SW. point of West Passage Island. The channel to the northward of it is four cables wide, being bounded on the north by a rock, with a reef which shows at low water, a cable and a half west of it. North of the rock, one and a half cable, is a small islet; and northward of the islet four cables is Rugged Island.

The northeastern of the Passage Islands is a bold bluff, which is steep to on its northern face, from whence you may steer to pass either north or south of White Island (which bears west from the Passage Islands $4\frac{1}{2}$ miles); if to the south, beware of three rocks which lay S. by W. 1.1 mile from it.

E. 12° N., 2.2 miles from White Island is the south rock of a reef extending from an island on the coast; having passed which vessels may haul to the northward, and work up inside Chimney Island, to the westward of which there are no dangers, except a rock at the entrance of the inlet (on the south point of which is a walled town and a pagoda) on the western shore, which will be avoided by keeping a cable and a half from the shore.

Hing-hwá fú Sound. Vessels bound into Hing-hwá fú 興化府 Sound must steer to the northward from the Chimney Point (on the west side of Lamyet) seven miles, when they will be a mile to the northward of Nob Island, and may steer for Fort Point which bears NW. $7\frac{1}{2}$ miles from Nob; there is a patch of rocks to the NW. of the latter, the easternmost of which bears N. 11° W. from it eight cables, and the northwesternmost N. 50° W. 2.8 miles; part of them always show.

Reef off Fort Corner or Wán-ngán 萬安 Another patch will be found ESE. from the Fort Point, the southeasternmost of which bears S. 68° E., two miles from the Fort Corner. Good anchorage in six fathoms will be found with the Fort Corner bearing ENE., but the point extending from it has rocks which will show at low water $1\frac{1}{2}$ cable from high water mark; the sand line at low water trends NW. by W. from the point.

The entrance to Hing-hwá fú river bears W. by S. from the Fort Corner, the depth of water shoals to six feet, five miles from the Fort. On the main SW. from the Fort, is a piratical establishment.

<i>Eighteen Yit.</i>	<i>Cap.</i>	<i>Sand I.</i>	<i>Junk Sail Rock.</i>	<i>Haitan Straits.</i>
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To the northward of the large Lamyet is a group of small islands (called by the Chinese the Eighteen Yit); between this group and the large island are numerous rocks and shoals rendering the bay useless for shipping.

N. 21° E. six miles from the highest part of the Lamyet is an islet called the Cap, which is the southeastern of the Eighteen Yit. Vessels entering the Hái-tan Strait, should pass to the eastward of this and the Double Island, three miles N. of it, keeping to the westward of a group called Reef Islands which bear from the Cap N. 49° E. five miles. NNE. four miles from Double Island, is a remarkable White Island with sandy beaches and detached hills; the channel between this and Reef Island group is foul, having many rocks in it, but it has not been sufficiently examined. After passing to the westward of Sand Island, which has several rocky islets upon its NW. face, a pagoda situated upon the south point of a shoal bay, with the ruined walls of a town near it, will be seen to the westward. Here vessels will have smooth water, being protected from the easterly swell by Three Chimney Island, which is the large island immediately to the northward of Sand Island. In the centre of the channel between this island and the pagoda, the water is deep. The best anchorage is close under the shore of Hái-tan, near to Observatory Island, avoiding a reef to the westward of it, which is nearly covered at high water. Observatory Island is in latitude 25° 25' N., and longitude 119° 45' E.

Vessels intending to pass through the Hái-tan Straits (which I recommend them not to do) must steer SW. by W. from Observatory Islet (on the Hái-tan shore) two miles, to avoid as and spit which extends from the point NW. of it, and then haul to the northward for Junk Sail Rock, from whence a reef extends half a cable to the southwestward.

From Passage Island, which lies NW. by W., 1.1 mile from Junk Sail, a sand-bank extends southerly, the end of which bears west from the Junk Sail, the channel between the two being rather less than a mile. A reef of rocks lays N. 45° E. from the summit of Passage Island distant three cables, which will show at half tide. Pass to the northeastward of it, and between it and a small islet four cables to the northward, from whence a mud spit with rocks on it extends S.S.E. three cables, and it must not be approached within a cable's length of high water mark on its western side.

Having passed the reef off Passage Island, steer N. by W. $\frac{1}{2}$ W. to pass to the eastward of Flat Island, which is two miles from Passage Island, and has a spit extending southerly a cable from it, and a ledge of rocks off its NE. point, on which the Plover lost her false keel; then bring the E. end of Flat Island in line with the E. end of Passage Island, which it will be bearing S. 4° E., and will carry you up in mid-channel five miles beyond Flat Island. Care, however, must be taken not to open them, as there is a reef 1.2 mile above Flat Island which shows at low water; a hill on Hai-tan with three

<i>Pillar Rock.</i>	<i>Castle Rock.</i>	<i>Cow's Horn Peak.</i>	<i>Hope I.</i>
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chimneys on it bears E. by N. from it. By keeping the chimneys on the summit of Chimney Island to the southward of the west point of the islet to the NE. of Passage Island, it will be avoided.

When Pillar rock, or Shih-p'í ying 石牌洋 (which is on the Hái-tan shore, and bears N. by E. $6\frac{1}{2}$ miles from Flat Island) bears NE. by E., steer NW. by W. until Hope Island bears north, when it may be steered for, passing to the west of Castle Rock, which bears N. 7° W. from Flat Island $8\frac{1}{2}$ miles, and has a reef one cable and a half to the westward of it. The summit of Hope Island bears N. 15° W. from Castle Rock, four miles; between the two are several reefs. The west extreme of the nearest to the Castle bears N. 9° W. from it, distant eight cables; part of it is always above water. N. by E., 2.8 miles from the Castle Rock is a patch which shows at low water only; when on it the Cow's Horn, called Niú-kioh Shán 牛角山 a remarkable peak on the main outside the Straits, bears N. 10° W., being in line with the east end of Hope Island; the Pillar bears S. 33° E., and the Castle Rock is in line with the SW. point of Hái-tan.

The channel lies between it and a black peaked rock, which bears N. 76° W., eight cables' length from the reefs. Rocks extend from it at low water southeasterly $2\frac{1}{2}$ cables. There is also a reef south of it five cables, both of which will be avoided by keeping the summit of Hope Island to the northward of N. 5° E.

The passage out is to the eastward of Hope Island or 糖嶼 Táng seu; a reef of rocks extends from both islands in the channel, narrowing it to three cables. In working out, the summit of Hope Island must not be brought to the southward of S. 40° W., as there is a rocky patch with only nine feet upon it seven cables from Hope Island.

There is a rock on which the sea breaks at low water, N. 24° E. from Hope Island; on it the Cow's Horn bears N. 38° W. N. NE six miles from Hope Island are four islands, S. 71° W. from the western of which five cables, is a reef bearing also N. 24° E. from Hope Island, and a ledge extends southerly four cables from the eastern island.

There are three other channels between Hope Island and Hái-tan, none of which are so good as the one described; and as there is generally a heavy swell setting into the bay to the northward of Hái-tan, vessels will find some difficulty, unless they are fast sailers, in clearing the dangers in one tide.

The junks invariably use the Straits, but we found one that had been detained 27 days, waiting for an opportunity to get out at the northern end. The flood tide comes in from both ends of the Straits, the two tides meeting in the neighborhood of the Castle Rock.

<i>Entrance to Amoy.</i>	<i>Chapel I.</i>	<i>Shoals north of it.</i>	<i>Tingtae Bay.</i>
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Section 3.

FROM AMOY TO CAPE MONTAGUE.

[The Sailing Directions in this section show the outer islands and external dangers, along the coast in the 28th, 27th, 26th, 25th, and 24th degrees of north latitude; they were compiled by Capt. R. Collinson from the surveys of himself and Captain Kellett of H. M. ships Plover and Starling, in the months of January, February, March, and April. 1843. From Amoy to the Haitan Straits, they cover the same ground with the fuller surveys contained in the preceding section made by Capt. Collinson in 1844, but are not altogether superseded by them. The few addenda made by Capt. Collinson and published by order of Admiral Cochrane in 1844, have been inserted in their proper places. The latitudes and longitudes in Capt. C.'s surveys are given in degrees, minutes, and decimal parts.]

On approaching Amoy, (Hi'mun ching, 夏門城,) from the southward, Chapel Island, called by the Chinese Tungting 東碇, and situated in lat. $24^{\circ} 10' 3''$ N., and long. $118^{\circ} 13' 5''$ E., or $9' 44''$ E. of the SW. point of Kúláng seu 鼓浪嶼, may be seen from four to five leagues; it has an even surface, is about 200 feet high, and its circumference three cables. It is perforated at its southeast extreme, which shows when it bears E.NE. or W.SW. When in its neighborhood, a pagoda (called Nántái Wúshān 南大武山) will be seen, formerly elevated 1720 feet above the sea, but now much dilapidated; it is a good mark for the entrance.

Between Chapel Island and the main are two shoals. The extremes of the southern one bear from Chapel Island S. 60° W. to S. 79° W. The south extreme, having only one fathom on it, is distant $7\frac{1}{2}$ miles. The northern extreme, having $3\frac{1}{2}$ fathoms, is distant $5\frac{1}{2}$ miles; the direction and extent of the shoal is N.NE., $3\frac{1}{2}$ miles. When on the shoalest part, Chapel Island bears N. 60° E., and the island of Nínting 南碇 or Lantia, N. 63° W. The Northern shoal bears from Chapel Island N. 80° W., distant from it $8\frac{1}{2}$ miles; it is formed by a number of pinnacle rocks which show at low water spring tides, having deep water between them. Four miles due north of this shoal, with Chapel Island bearing S. 60° E., is a small bay, called Tingtae, which affords shelter for small vessels in the northern monsoon; it may be easily known by the flat table head (with three chimneys on it), forming the eastern point of the bay, and the ruin of a wall encompassing a hill above it. The pagoda of Nántái Wúshān is immediately over this bay, bearing N. 15° W.

<i>Chau-chat Rocks.</i>	<i>Wí-seu I.</i>	<i>Wú-án I.</i>	<i>Tsing-seu.</i>	<i>Chih-seu.</i>
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In entering Amoy harbor, should a vessel pass inside Chapel Island, she must not approach within a mile of the coast after passing Tingtae point. The Chauchat, or Tae-tseao 大礁 composed of three flat rocks, said never to be entirely covered, but over which the sea breaks, lies N. 22° W., 10.6 miles from Chapel Island. When on it, the three chimneys on Wú-seu shín Island are in line with the Nínt'í Wúshín pagoda, bearing S. 82° W. By keeping 'Taepín 大磐 or Wei-tsz' s'ú Point open to the eastward of Tsing-seu 青嶼 Island, (which it will be when bearing N. 55° W.,) it will be avoided. The channel between the rocks and Wú-seu shín Island is five cables wide, with deep water, but dangerous for ships in consequence of the chowchow water. The passage to the northward and westward of Wú-seu shín is dangerous, being strewn with rocks.

Wí-seu 浯嶼 Island is 1.2 cable long, and in the centre a cable's length broad. The northeast and southeast faces of this island are steep cliffs; on the east side is a sandy bay, and on the west three, with two batteries. On its summit (which is about 300 feet high) are three chimneys intended for night signals. There is a large village on the west side of it.

Wú-án. To the westward of Wú-seu shín, half a mile, is the island of Wú-án, which is five cables long; it is barren and without inhabitants. Between the two are three small islets, with reefs lying off them. Shelter from easterly winds, with a depth of from four to six fathoms, might be found here; but vessels had better not pass to the westward of Wú-seu shín, until more soundings have been obtained; the number of detached reefs in this neighborhood making it probable that many sunken rocks will be found.

South from Wú-seu shín Island 1.1 mile, is another half-tide reef, which lies 7 cables from the main. N. 32° E. from Wú-án island, lie two patches which are covered at high water, and between it and the main are several islets and half-tide rocks.

North 40° W. from Wí-seu shín island is Tsing-seu; midway between the two is a cliff islet (Jih-sü), northwest of which two cables, and S.W. one cable, are reefs which are dry at low water.

The entrance to the harbor lies between Tsing-seu and a small island north of it, 60 feet high, called by the Chinese Chih seu (or 日嶼 Jih-sü) The shores of both islands facing the passage are steep to, but one or two rocks lie one cable southerly from Chih-seu. Off Chungpat-siaou, which is the rocky islet immediately to the northeast of it, lie two half-tide rocks, three to four cables' distant, to avoid which, when standing to the eastward, and within half a mile of Chih-seu, keep the west tangent of that island open of the eastern extreme of Wú-seu shín.

*Seao-tin and Tae-tan Is.**Pagoda I.**Channel into Amoy Harbor.*

NE. by E. from Chih-seu are four islands; the two nearest, Ta-sao 大小 and Hwángkwa 黃瓜, are rather larger than it, and between which there are no passages. Seao-tin 小担 Island is 6 cables long, and about 200 feet high, and has a sandy bay on its northern side; between it and Hwángkwa there is a safe channel, which may sometimes be taken with advantage by ships; thereby enabling them to weather the Chauchat without tacking. Between Seao-tin 小担 and Tae-tin 大担 there is also a safe channel. Vessels cannot enter to the northward of Tae-tin, for between this island and Amoy there is only $1\frac{1}{2}$ fathom. On both of these islands there are three chimneys. Tae-tan is eight cables long, with a sandy isthmus in the centre, and a village on its western shore; the eastern end is about 300 feet high.

From Chihseu (or Jih-sü) to the outer harbor off Kúláng-seu, the course is N. 38° W., $4\frac{1}{2}$ miles, with a depth varying from 7 to 12 fathoms. Between Tsing-seu and Taopan Pt. is a deep bay with many rocks and shoals in it, to avoid which vessels should keep Pagoda Island, or Kí seu 鷄嶼 open of Taopan Point. Vessels entering Amoy from the northward, to clear the shoal which extends three miles due south, from the western pagoda on Quemoy 金門, and dries at low water spring tides, must keep the southern extreme of Taetan open to the northward of Pagoda Island. With these marks on, when the pagoda on Quemoy bears N.NE., you are clear of the danger: or a better mark is, (as Pagoda Island may not be seen,) after passing Leeo-Loo 料羅 Point, to steer to the southward until (Nántai Wúshín or) the high pagoda bears west, when you may steer west without fear until you make Wú-seu shan and the Chauchat. The south end of Amoy is a sandy point, with several rocks extending two cables from the shore. Between this point and the next west of it there is a half tide rock, three cables from the shore. To avoid this, when standing into the coast, a cliff point with a battery, and three chimneys on it, (1.3 mile from the rock.) will be seen, and also a sandy point with a large stone at its southern extreme, 0.8 of a mile further to the northwest. Tack before these two points come in line with one another. From the south point to the remarkable stone on the beach, the three fathom line extends two cables from the shore.

The channel between the island of Kúláng seu and Amoy is so narrow that a stranger would not be justified in passing through it until he had anchored, and made himself acquainted with the marks. A rock at the entrance of this narrow strait, called Coker's Rock, with only four feet water on it at low water spring tides, may be avoided by bringing the centre of Hau-seu 猴嶼 Island on with a remarkable peak, the highest but one on the land behind it. When the rock off the south tangent of Kúláng seu is in line with Pagoda

<i>Kúláng seu.</i>	<i>Hau-seu.</i>	<i>Anchorage.</i>	<i>Inner Harbor.</i>	<i>Facilities at Amoy.</i>
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Island, and a pinnacle rock off the eastern extreme of Kúláng seu is in with a remarkable Tree point on that island, you are on it. From this position a vessel should keep as close to the Amoy shore as the junks anchored off it will allow them. The small island off the City Point has deep water close to it; between this island and Hau-seu (*i. e.* Monkey Island), is the best anchorage for a ship, having a reef that extends from City Point in a N.N.W. direction lying to the northward of her. Vessels cannot anchor in the straits without a great risk of losing their anchors, as the bottom is very rocky and uneven. North of the island of Kúláng seu, there is a pinnacle rock which is nearly covered at spring tides, and distant from the shore three cables. The mud dries between this rock and the island. All the points of Kúláng seu have rocks off them; off the southwest extreme there is a half tide rock, $1\frac{1}{2}$ cable from the shore.

The island of Kúláng seu is 1.1 mile long and 0.7 wide, and 2.85 in circumference; there were five batteries on it. The channel between it and Amoy is 675 yards wide in the narrow part; at the entrance it is 840 yards. The ridge of hills is about 280 feet high, being less elevated than those opposite on the Amoy shore; these hills are granitic, and the geological features of the country primitive. Fresh water is plentiful, and the island has been well cultivated. The population may be estimated at between 3000 and 4000.*

To the westward of Kúláng seu there is a good and safe anchorage in 7 or 8 fathoms. Close to either shore the water is deep, but in the centre there is a bank with from 7 to 9 fathoms on it. Vessels wishing to anchor off the town, should use this passage, and by keeping the rocks off the west extreme of Kúláng seu in line with a remarkable sharp peak on the south shore of the harbor, until the peaked rock off the north end of Kúláng seu bears to the southward of east, she will avoid the mud bank and rocks running off that island, and may choose her berth off the city. The channel round the island of Amoy is so narrow and winding, that directions would be useless; the chart is the best guide. Besides the excellent shelter that this harbor affords, and it is one of the best on this coast, the Chinese have docks for building and repairing their largest junks. The access and egress are easy; in the outer harbor there is good holding ground, and unless vessels are badly found in ground tackle, they will ride out almost any gale. In the Inner Harbor, capable of containing from 60 to 100 vessels, there is little or no swell, and the houses are built close to the beach. Fresh water and supplies of every description may also be had of the best quality and cheap. The rise and fall of the tide from one day's observation on the full moon in September, was fourteen feet and a half; at this period, however, the night tides exceed the day by two feet. The change in the depth, in all probability, three days after full and change, would

* It is now nearly desolate; during the insurrection in 1854, the people were driven off and most of the villages destroyed.

Quemoy I.	Leeo Loo Bay.	Dodd's I.	Hú-i 'Tau Pt.	Oyster I.
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exceed sixteen feet. This would be of great importance to vessels requiring repair, particularly as sites for docks, and ample materials for making them, are to be found upon the island of Kuláng seu, as well as in other parts of the harbor.

Shelter may be obtained under Quemoy, but the anchorage under its NW. side is foul with many half-tide rocks. The channel between it and the main leading into Hú-i 'Tau Bay has only 3 feet at low water. N. 74° E. from the Chauchat, and distant sixteen miles, is a small indentation in the coast called Leeo-Loo 料羅 Bay, where small vessels shelter themselves from the violence of the northeast monsoon, by bringing the south extreme rocky point of Quemoy in line with Nántai Wushán Pagoda, and as close as possible to the point forming the eastern head of the bay, in four fathoms sandy bottom, with fair holding ground. There is a village amongst some trees at the head of the bay, with a fort on a bluff to the westward of it. The land over it is high and easily distinguished.

Five miles E.NE. from Leeo-Loo point is Dodd's Island, called by the Chinese Pa'ting 北錠; it is distant from the nearest part of Quemoy $2\frac{1}{2}$ miles. There appeared to be no channel between it and the shore; and there is a sunken rock N. by E., $\frac{3}{4}$ mile from the island. A reef extends some distance to the north of it. N. 34° E., five miles from Dodd's Island is the point of Hú-i 'Tau 圍頭 Bay, in lat. 24° 31' N., and long. 118° 31.5' E. This bay affords good shelter from northeast winds; it may be easily known by two very remarkable peaks situated in the bottom of the bay. The eastern peak bears from the point N. 45° W. There is a shoal in the centre of the bay, which extends two or three miles in a W.NW. direction. This shoal may be avoided by keeping a remarkable hill inland, resembling a dome, open to the southward of the eastern high peak in the depth of the bay. In entering, give the point of the bay a berth of at least three quarters of a mile, for there is a reef running off it, but on which the water generally breaks. The best anchorage is off Oyster Island, but as vessels do not visit the bay, except for shelter, it would be advisable to anchor just inside the point with it bearing E. by S. or E.SE. South of Oyster Island there is a ledge of sunken rocks, which at low water have only a few feet on them. To avoid these rocks, keep Oyster Island to the eastward of north. Vessels from the southward, intending to anchor, should not stand too far into the bay until it is better known; there are overfalls from 10 to 4 fathoms, and there may be less water. The junks go to Amoy by this passage, and the Chinese say there is water for small vessels, but it must be very intricate.

The coast between this and Chimmo Bay is clear of dangers, and the general soundings are from 12 to 15 fathoms. There is no shelter for vessels, but junks anchor under some of the points. The small Pagoda Island off the southeastern point of Chimmo Bay is in

<i>Chimmo Bay.</i>	<i>Anchorage.</i>	<i>Ockseu Is.</i>	<i>Sootsze.</i>	<i>Lamyit Is.</i>
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lat. $24^{\circ} 42' N.$, and long. $118^{\circ} 42' E.$ This bay may be known by a pagoda called by the Chinese Kúsíu tih 姑嫂塔, on the highest hill in the northern end of the bay. Although vessels lie here throughout the year, it cannot be called a good anchorage, as it is exposed from E. by N. to S.S.E. Vessels entering this bay from the northward must not approach the land nearer than one mile, as there is a rock which shows at low water, half a mile off shore, on which a brig called the "Fairy" struck, and from which it has taken its name.

W. by S., $1\frac{1}{2}$ cable from the rocky islet off the northern point of the bay, is a ledge of rocks, which uncovers at low water, and on which the sea generally breaks. Half a mile to the W.N.W. of the northernmost rocky island off the southeast point, are two sunken rocks, to clear which keep a remarkable clump of trees in the depth of the bay on with the right shoulder of the high land in the north-west part of the bay. There are rocks a short way from the beach all round the bay. The best anchorage for vessels is as close up to the northern shore as the water will allow; the holding ground is good. There are several very large towns in this bay, and numberless fishing boats; supplies may be had and at cheap rates.

Ockseu 烏坵 (or Wúkiú, probably a contraction of Wúkiú sü 烏坵嶼) consists of three islands, the centre one a barren rock, nearly joining the eastern island. The steamer "Nemesis" anchored under this island. There is a considerable fishing village on it, which is difficult to be seen unless very close. The western island is the largest, and is in lat. $24^{\circ} 59.3' N.$, and long. $119^{\circ} 25.5' E.$

W.N.W., twelve miles, is a group of islands, consisting of one large and four small, with a reef to the northward of them, called Soo-tsze. There is a reef which covers at high water 1.8 mile to the westward of Sootsze. From it, the NE. island of the group bears N. $83^{\circ} E.$; and Fort hill on the main, opposite to Lamyit, N. $10^{\circ} E.$ Off the southwest point of Lamyit is a shoal, extending $1\frac{1}{2}$ mile, to avoid which do not bring the islet off the south end of Lamyit to the eastward of S. $82^{\circ} E.$, until the west point of the island bears to the eastward of north. There is good shelter on the south and west sides of Lamyit, but no vessel should attempt to pass to the northward of it without the chart.

N.N.E., $12\frac{1}{2}$ miles from Ockseu, is the largest of the 南日 Lamyit islands, called by the Chinese Chungtung sh'án. It is 7 miles long in an E.S.E. and W.N.W. direction. The eastern peak is the highest, being 565 feet above the sea; it is in lat. $25^{\circ} 12.3' N.$, and long. $119^{\circ} 36' E.$ There is a remarkable table land to the southwestward of it called Powshan. This island is very low and narrow in several places, and has a remarkable conical hill towards its west end. Notwithstanding its barren appearance it is very populous.

Eighteen Yit. Sand I. Hāitan Straits. Turnabout I. Hāitan Peak.

To the northward of the large Lamyit is a group of small islands, called by the Chinese the Eighteen Yit; between them and the large island, there are numerous rocks and shoals, rendering the bay perfectly useless for shipping. N. 81° E., 6 miles from the highest peak of the Lamyit, is an islet called Cap, which is the southeastern of the Eighteen Yit. Vessels entering the Haetan Strait should pass to the eastward of this and the Double island three miles to the north of it, keeping to the westward of a group called the Reef Islands, which bear from the Cap N. 49° E., five miles. N.N.E., four miles from Double Island is a remarkable White island with sandy beaches and detached hills; the channel between this and Reef Island group is foul, having many rocks in it, but it has not been sufficiently examined. After passing to the westward of Sand Island, which has several rocky islets on its northwest face, a pagoda situated on the point of a shoal bay, with the ruins of a town will be seen to the westward. Here vessels will have smooth water, protected from the easterly swell by Three Chimney Island, which is the large island immediately to the northward of Sand Island. In the centre of the channel between this island and the pagoda, the water is deep. The best anchorage is close under the shore of Haetan, near to Observatory Island, avoiding a reef to the westward of it, which is nearly covered at high water spring tides. Observatory Island is in lat. $25^{\circ} 25'$ N., and long. $119^{\circ} 45'$ E. A vessel leaving this anchorage bound to the northward must give the south point of Haetan a good berth, as there are several rocks off it.

N. 80° E., $5\frac{1}{2}$ miles from the Three Chimneys, and S. 65° W., 7 miles from Turnabout Island, is a very dangerous shoal. Vessels coming from the northward intending to enter the harbor, after passing Turnabout, should steer for Triple Island, passing within a mile of it, being very careful not to approach the south point of Hae-tan too close.

Turnabout Island in lat. $26^{\circ} 26'$ N., and long. $119^{\circ} 58.7'$ E.; it is distant from the nearest or southeast point of Hae-tan four miles; it has two small islets in its neighborhood. The channel between it and Hāi-tan is safe. Under the eastern point there were several large junks seen at anchor, and a considerable village. Unless this anchorage gives good shelter, there is no bay on the eastern coast of Haetan that vessels ought to enter, as they are strewn with rocks and shoals. Under the high peak of Haetan, and to the eastward, is a bay that was entered by the surveying vessels "Starling" and "Plover" in a strong northeasterly wind, out of which they were glad to get, and lucky in having escaped getting ashore; but the entrance into it and the anchorage are full of rocks, with a heavy swell when blowing hard.

The high peak of Haetan 海壇 is in lat. $25^{\circ} 35.7'$ N., and long. $119^{\circ} 51.3'$ E., and its elevation above the sea 1420 feet. The north coast and the northern entrance of the Straits, as seen from the peak, presented to view many rocks and islands, which would always

<i>White Dog Group.</i>	<i>Breakwater.</i>	<i>Entrance to the R. Min.</i>	<i>Reef.</i>
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render the entrance from the northward, and navigation of the Straits extremely dangerous. The White Dog Islands bear N. 14° E., 23 miles from the peak of Haetan.

The White Dog group, called by the Chinese Pih-kiuen 白犬 has two large and one smaller island; $1\frac{1}{2}$ mile northeast from the eastern island is a rock on which the sea generally breaks. Anchorage for ships of any draught may be had under the western island in the northeast monsoon. A reef of rocks running off from the western extreme of this island, forming a natural breakwater, affords good shelter close under them for vessels under 18 feet draught:—here whole fleets of Chinese junks anchor during foul weather. As the water decreases gradually towards the island, large ships may approach as convenient (keeping in mind that there is 18 feet rise and fall). H. M. ship "Cornwallis," 74, vice-admiral Sir William Parker, anchored here for five days with strong northeasterly winds, and rode easy. The bearings from her anchorage were as follows:—west point of northwest island, N. $\frac{1}{2}$ W.; village, N.N.E.; smallest island, E. $\frac{1}{2}$ S.; eight fathoms at low water.

A large ship ought to approach the island, until the passage between them is shut in by their tangents. One cable off the western point of Village bay on the south side of the western island is a half tide rock. The channel between the islands is safe, as the dangers show. The Breakwater is in lat. $25^{\circ} 53' 1''$ N., and long. $119^{\circ} 57' E.$ The highest peak of the island is 598 feet above the sea. Fresh water may be obtained here in small quantities. These islands are inhabited by a few fishermen.

Vessels bound for the River Min 閩河 from the anchorage under the White Dog Islands, should start with the ebb tide. The entrance bears N. 55° W., $8\frac{1}{2}$ miles from the Breakwater. When this distance has been run, a good lookout must be kept from the mast-head for Rees' Rock (a small black rock about 20 feet high) on the southern side of the channel, which will be seen bearing N. 71° W., $4\frac{1}{2}$ miles. This will place the vessel about eight miles from the land. The channel between the breakers is 2 miles across at the entrance, and gradually decreases to half a mile. There is a remarkable sharp peak on the north bank of the river, and a square peak on the south bank; nearer than Square Peak, and to the southward of it, Round Island will be seen, and to the southward of that is a sharp sandy peak bearing about S. 68° W. This latter may be mistaken for the sharp peak of the north bank of the river, unless the bearings of the White Dog group be referred to.

Eastward of the north horn of the channel is a dangerous reef which shows only at low water. The bearings on it are, Matsoo-shan Peak, N. 54° E.; Sea Dog, N. 88° E.; W. White Dog peak, S. $45\frac{1}{2}^{\circ}$ E.; Sand Peak, S. 59° W.; Sharp Peak, N. 71° W.; and Rees' Rock in line with the south peak of Square Peak Island. The best mark to keep to the southward of it, and for entering the channel, is to bring Rees' Rock in line with Square Peak bearing N. 81° W. There

Rees' Rock. Hokeanga I. Woga Fort. Temple Pt. Kinpai-mun.

is a small knoll, with 9 feet on it at low water, in the centre of the passage; it bears S. 86° E., $3\frac{1}{2}$ miles from Rees' Rock, and the above leading mark will keep you clear of it.

Having entered, steer so as to pass one mile north of Rees' Rock; the breakers will show on each side of the channel if it be near low water at the time and there is any swell. Should the breakers show, by skirting the northern shoal, a vessel will insure the deepest water. The course from Rees' Rock is N. 63° W., on which bearing a remarkable pinnacle rock on the northeast side of Hokeanga is in line with a white battery on the northern shore of the Kinpai-mun. In going up, keep the two islets called the Brothers on the face of the island of Ho-keanga 壺江 in one. This will carry you in mid-channel until you are abreast of Sharp Peak Point, when you can haul up N. 55° W. for Temple Point, which is on the north bank of the river, and will be known by the trees on it.

In the channel without Rees' Rock, the depth of water is generally three fathoms. Between Rees' Rock and Sharp Peak Point, close to the northern breakers, there is a hole with five and six fathoms, where vessels may stop a tide and find tolerable shelter. Sharp Peak Point may be passed within a cable's length. The bay west of it is shoal, and under the peak the two fathom line extends nearly one mile from the shore. The mud also extends southeasterly from Hokeanga nearly $1\frac{1}{2}$ mile;—vessels beating in this passage must therefore keep the lead going.

Woga fort is a dilapidated circular building on the top of the first hill, on the island west of Sharp Peak. The junks laden with timber lie immediately under it, until the whole convoy is collected, sometimes amounting to eighty sail. S. 17° W., $3\frac{1}{4}$ cables from the Temple (called Hoktow or Fuh-tau 福斗), is a knoll with only $2\frac{1}{4}$ fathoms on it. Sharp Peak seen over the lower part of Woga Point will put you on it. From the West Brother, the mud extends westerly one mile; on its northern edge is a patch of rocks, which are covered at a quarter flood. The West Brother bears from it S. 74° E., and the Temple N. 12° E.

From the Temple to Kinpai-mun is not quite two miles, W. by S. There are two islets at the entrance of the passage. Pass between them, and keep over towards the south shore to avoid a reef, which lies W. by S. $\frac{1}{2}$ S. from the northern islet. The channel is not quite two cables' length wide, and should only be attempted at slack tide, for the chowchow water renders a vessel unmanageable.

Two cables to the westward of Kinpai-mun is the tail of a sand bank, to avoid which keep the southern shore close on board; the distance between it and the edge of the bank being under two cables. When abreast of the Ferry House, which is $1\frac{1}{2}$ mile above Kinpai, and on the right or southern bank, edge over to the other shore, passing Wedge Islet at a cable's length. Tree Point will then be seen on the southern bank. A half tide rock bears N. 9° W., $4\frac{1}{2}$

*Ferry House.**Min-gan hien.**Pagoda l.**Fuhchau fū.*

cables' length from it. When on it, the Ferry House is in line with Kinpai Point. On the northern shore, after passing Wedge Islet, are two rocky points extending nearly a cable's length from the embankment.

This reach runs SW. by S., and NE. by N. At the distance of six miles from Kinpai-mun, the river narrows again to $3\frac{1}{4}$ cables, the land rising on each side to 1500 and 2000 feet. The town of Min-gan 閩安 is on the left or northern bank of the river, one mile within the strait. The river continues narrow for three miles, the depth of water being above 12 fathoms, and in some places no bottom at 29 fathoms. Vessels will have some difficulty in getting through this strait with spring tides, unless with a leading wind, in consequence of the chowchow water. Rather more than half a mile above Mingan, and on the same side of the river, is an islet crowned with a fort.

The banks of the river on each side are steep cliffs with many batteries. At the upper or south end of the gorge, are two islets on the right bank of the river. In going up, leave these islands on your larboard hand, passing close to the northern one of the two, to avoid a shoal patch of $1\frac{1}{2}$ fathoms, which lies two cables W.NW from the island. Having passed this island, keep along the right bank, gradually hauling up for the pagoda Ló-sing táh 羅星塔. When you have passed the low point of the island on which it is situated, anchor east of it. S. 12° E. from the pagoda, rather more than two cables, is a sunken rock, which shows only at low water spring tides. It is recommended to pass close to the pagoda, if vessels intend proceeding up higher, but as the river is only navigable for vessels three quarters of a mile beyond the pagoda, and the channel is not only narrow but the tides are stronger, it would be advisable not to go above it.

Above the pagoda, the river turns abruptly to the northwest. The city of Fuhchau fū 福州府 is situated on the left bank of the river, nine miles above the pagoda; the distance to the city (by the river) from the rocks at the entrance is not quite 34 miles. Four miles below the city, the river is staked half way across, and the remainder rendered difficult even for junks to pass, by large piles of stone which are covered at high water.*

Due north of the Western White Dog is a large island called Matsoo-shan 馬祖山, and between the two, N. 14° E. from the White Dog, is a precipitous black rock, about 60 feet high, with reefs about it, called the Sea Dog. Between the Sea Dog and Matsoo-shan, there are two other reefs, which are never covered. S. 28° W., 1.1 mile from the Sea Dog, is a rock which is seen only at low water;

* H. M. Steamer "Reynard" was carried quite up to the bridge, in 1851. For further details respecting the navigation of the Min, see the next Sections.

<i>Sea Dog Rock.</i>	<i>Matsoo shan.</i>	<i>Changche shan.</i>	<i>Tinghae Bay.</i>
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when on it, the west end of Matsoo-shan bears N. 26° W., and the Breakwater at the west end of the White Dog, S. 18° W. There is also an island off the eastern end of Matsoo-shan, with a reef running off its eastern point. Shelter may be had under this island from the northeast monsoon. There is a deep bay on its northwestern face, where good shelter may be had from the southwest monsoon. From the peak of this island, the reef at the entrance of the Min River bears S. 54° W., $7\frac{1}{4}$ miles. In the northern, and also in the western sandy bays, fresh water may be obtained.

Northeast, three miles from Matsoo-shan, is another large island called Changche shan 長岐山, with two very remarkable sharp peaks on it, the highest elevated above the sea 1030 feet; it is in lat. $26^{\circ} 14'$ N. and long. $120^{\circ} 1.7'$ E. The bay on the south side of this island affords good shelter in the northeast monsoon. Vessels entering from the northward may round the southeastern horn of it close, and anchor within the point in six fathoms. Vessels bound to the River Min should anchor here, as from this anchorage in the northeast monsoon, they may always get to the bar at the precise moment they require it, but from the White Dogs a vessel will barely fetch. After a little intercourse, pilots might also be obtained, as there is a large fishing population on it.

Tinghae Bay, 定海 which lays N. 42° W., 11 miles from the summit of Matsoo-shan, is a safe anchorage in the NE. monsoon. There is a cluster of islets, 8 miles, N. 51° W. from Matsoo-shan, between which and Flat Island (which is 2 miles N. 55° E. from them) is a channel; but sunken rocks extend half a mile from the cluster; therefore vessels had better pass south of the latter. Tinghae Bay will be recognized by the small islets off the south point; there are the remains of the city wall, but the place appears now to be nearly deserted. The junks frequent a bay further to the eastward, which affords them good shelter, but cannot be recommended for larger vessels; it is called by the Chinese Wangke, and has a rock in the centre of the bay 0.7 of a mile from the shore, which I suppose to be the one on which the "Phlegethon" struck. To the southeastward of this bay are several small islets, with detached reefs between them and the main, which is distant $1\frac{1}{2}$ mile; and S. 40° W., 5 cables from the southern islet, are two patches of rock which are covered at high water. When on them, the hill over Tinghae bears W. 33° N., and the summit of Matsoo shan S. 12° E. The eastern extremity of the main is eleven miles from Tinghae Bay, the whole being a narrow peninsula, in some places only half a mile wide. Off the east point, a quarter of a mile distant, is a double island with a reef $\frac{3}{4}$ of a cable to the east of it. The junks use the channel west of the island, but vessels without the aid of a scull had better keep to the eastward.

On the northern face of Changche shan are several small islands, the largest of which bears north $2\frac{1}{2}$ miles. There is no safe passage

Trio Rocks. Alligator I. Larne I. and Rock. Tungyung Peak.

between these islands. N. 61° E. from the southeast point of the same island, are three peaked rocks, called the Trio Rocks, about 50 feet above the sea, between which and the point is a safe channel. N. $12\frac{1}{2}^{\circ}$ E., $4\frac{1}{2}$ miles from the summit of Changche shan, is a small islet, inadvertently omitted in copying the charts. There is a reef 2 cables south of it. Care must be taken in approaching these islands from seaward to avoid Alligator Island (called Tungsha 東沙); it is due east of Matsuo shan peak $24\frac{1}{2}$ miles. From the south extreme of the White Dog Island, it bears N. 62° E., $25\frac{1}{2}$ miles; it is in lat. $26^{\circ} 9' N.$, and long. $120^{\circ} 25.7' E.$, about 40 feet above the level of the sea, and is a flat barren rock.

N. 56° W., $12\frac{1}{2}$ miles from Alligator Island, is a small rock, called Larne Rock, with one awash two cables to the northward of it. It bears from the high peak of Changche shan N. 80° E., and is distant from it 11 miles. N. $18\frac{1}{2}^{\circ}$ W., 5 miles from Larne Island, is broken water; the north end of Tungyung bears from it E. 7° S., the Black Rocks, S. 69° W., and Cone Island, N. 37° W.

N. 11° E. from Larne Rock, distant $5\frac{1}{2}$ miles is Larne Islet; it bears from the high peak of Changche shan N. 58° E., 14 miles. It is about 200 feet high, with large boulders sticking up here and there. Near the summit are three houses, and off its northern and southern ends are ledges of rocks. N. 72° W., $7\frac{1}{2}$ miles from Larne Island, and bearing from Changche shan Peak N. 25° E., 11 miles, is another patch of rocks, about 40 feet above the sea.

The peak of Tungyung 東永 bears from Larne Islet N. 84° E., distant 14 miles, and is the easternmost island on this part of the coast; the highest part of it is in lat. $26^{\circ} 23.2' N.$, and long. $120^{\circ} 31' E.$, and elevated above the sea 853 feet. Its appearance is level and flat, topped with steep cliff shores; off its south extreme is a ledge of rocks. There is another island half a mile to the westward of it. They appear however as one, except on a NE. by N. or SW. by S. bearing. Under this island there is good anchorage during the northeast monsoon. North half a mile from the eastern point of the western island, is a sunken rock. Tungyung has a large village and fishing establishment on its western side.

N. 68° W., 20 miles from Tung-yung, is a remarkable Conical Island; it has a reef off its northeast point; with this exception the channel between it and the two islands north of it is safe, and two miles wide. West of it, $4\frac{1}{2}$ miles, is a large island (Spider Island), with good shelter from the northeastern winds on its western side. The highest part of the island is 620 feet above the sea; the other peaks of it are nearly the same height. There is a large village in a bay on the south of it, and off the southwest point is a reef. On the northeast face of it are four islets, and one on the northwest, between which and Spider Island there is a half tide rock. To the westward are many islets and rocks.

Cone I.	Spider I.	Rocks near them.	Double Peak I.	Pihseang Is.
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S. 48' E., 0.8 of a mile from the Cone, is another rock which shows only at low water. The south end of Spider I. bears N. 85° W. from it. To the W.N.W. of Spider I. are three islets; between the first and Spider I. is a sunken rock; between the first and second (which has a sandy isthmus) is a good channel; between the second and third are half tide rocks; and between the third and the main, which is 3 miles distant, is a clear channel with four fathoms water. Opposite to the third island, on the main, is a cove which was pointed out as the rendezvous of the pirates. S. by W. $\frac{1}{2}$ W. from the second island, $1\frac{1}{2}$ mile, are two reefs, which are covered at high water. H. M. Str. "Vixen" saw discolored water 7 miles to the northward of Tung-yung. The "Plover" in this neighborhood passed over several patches without changing her depth of water, and a pilot denied the existence of any rock in the neighborhood, although there is one inserted on the Chinese chart. Opposite to Double Peak I. on the main is a village called Seongtin, the inhabitants of which assisted the pirates in escaping from the "Plover's" pinnacle, and the merchant junks which were boarded in search of arms, pointed this place out as the head-quarters of pirates when in this neighborhood.

Four miles northeast of Spider Island is a large island, with two remarkable cones on its northern end called Double Peak Island; it is $3\frac{1}{2}$ miles long, and its highest peak 1190 feet high. There is very good anchorage, the best being under its southern point, the two small islands north of Cone Island sheltering you from the eastern swell. Between it and the main, there is a good channel, three miles wide, whose depth varies from 6 to 18 fathoms. The mainland to the westward of this island is high, with very remarkable conical peaks, and much indented. Water and a few vegetables may be had here.

NE. by E., 10 miles from Double Peak, is a group of islands called Pih-seäng shan 北礮山 or Tsih-sing 七星. The northern one is the largest. There is at its southwest angle, a small bay, which would afford shelter to two or three small vessels. This is a Chinese vice-admiral's station; when the surveying vessels visited it, there were three war junks at anchor in the bay. Between the northern and the southern islands of this group, there is a safe passage, but the bay is thickly studded with fishing stakes. The northern island is in lat. 26° 42.5' N. and long. 120° 22.7' E. The southern, which is a detached rocky island, is about 60 feet above the sea, in lat. 26° 32' N. Between this group and the main, the average depth of water is 9 fathoms.

Due north, 12 miles from the Pihseäng shan group, is a high island called Fuhyaou shan 福瑤山 1700 feet above the sea, with a good harbor between it and the main; it in lat. 26° 56.1' N., and long. 120° 22.6' E. The entrance to the northward is broad and open, the southeastern channel is only one cable wide. Good water

Fuhyaou shan. Rock. Table I. Pihquan Harbor and Is. Namquan I.

is plentiful and easily obtained here. N. 60° E., 5 miles from Fuhyaou shan, is a group of small islands affording no protection, but having no danger near them. And N. 13° E., 5½ miles, is a solitary islet having a reef off its eastern end. The southwestern entrance to Fuhyaou shan harbor will probably be found better than the eastern; it has not however yet been examined.

S. 74° E., 10 miles from Fuhyaou shan, and N. 45° E., 15 miles from Pihseāng shan, is a very dangerous rock, over which the sea breaks; it is in lat. 26° 53' N., and long. 120° 34' 3" E. N. 80° E., 16 miles from the eastern point of Fuhyaou shan, there is a small group of islands called Tae shan 臺山 (*i. e.* Table Hill): the easternmost large island (remarkable for its table top) is situated in lat. 26° 59' 5" N., and long. 120° 44' E., and is 618 feet above the sea. S. 25° W. from Table Island are two rocky islets, about 100 feet high, and which are almost joined. There is bad shelter to be had between the two largest islands, as close (half a cable or less) to Table Island as a vessel can with safety go. There is a passage between the two islands, and to the northeast of the western large island, there is a most remarkable Mushroom rock, about 260 feet high; and joined to the islands by reefs at low water. There is an indentation on the eastern face of the middle large island, that affords shelter to a number of small fishing junks.

N. 60° E., 7½ miles from Table Island, are three small rocky islets, with several rocks awash near them. Three miles to the N.W. of these is another rock, about 50 feet above water, and remarkable from its being cleft in two. To the westward, between this group and the harbor of Pihquan, there are also several rocks which only show at low water. From the number of rocks and shoals about these islands, all of which may not yet be discovered, it will be necessary for vessels to approach this part of the coast with great caution, or indeed to avoid it in this latitude altogether.

N. 45° W., 14 miles from this group, is the island and harbor of Pihquan 北關; it is in lat. 27° 9' 7" N., and long. 120° 32' 6" E., and will afford good shelter in the northeasterly monsoon for vessels drawing 15 feet.

Three quarters of a mile west of the south point of Pihquan is a rock nearly level with the water's edge, with a reef that is covered; half a cable's length to the northwest of it.

This roadstead is 1½ mile broad, and has three fathoms in it. Fresh water may be got in the sandy bay at the foot of the three chimneys on Pihquan.

To the westward of the roadstead is the island of Namquan 南關 within which is a deep bight, and a walled city. West of it good anchorage will be found. To the northward of it on the main is a most remarkable peak, called by the fishermen Pihquan Peak. The boundary line of the provinces of Chehkiang and Fuhkien, passes through Pihquan harbor.

Namke shan. Ta New Harbor Pihke Is. Tungpwan I. Tseigh Is.

N. 35° E., distant 30 miles from the Tae-shan group, is a group of islands, the largest of which is called by the Chinese Namke shan 南圮山. It consists of one large and fourteen smaller islands; the large island is 737 feet above the sea, and has a good harbor on its southeastern side in the northeast monsoon, where there is a good watering place. The eastern horn of the harbor is in lat. $27^{\circ} 26' 3''$ N., and long. $121^{\circ} 6' 6''$ E. Vessels should not pass between the islets which form the southwest part of the group, as there are many reefs which cover at high water. The westernmost island makes like a cone, and has reefs to the northward. The southern islet is a castellated rock, and is 5 miles distant from the rest of the group.

W. by S., 24 miles from Namke shan, on the main, is a harbor, called Ta New 大牛. It is too shallow for anything drawing more than 9 feet. There is a reef, showing only at low water, $3\frac{1}{2}$ miles from the shore, to the northward of this harbor. It bears from the highest part of Namke shan S. $76\frac{1}{2}^{\circ}$ W.; a cleft rock at the entrance to Ta New harbor bears from it S. $49\frac{1}{2}^{\circ}$ W., and a peak on the main to the northward N. 23° W.

N.N.E., 10 miles, is a group of islands, the largest of which called Pihke shan 北岐山, in lat. $27^{\circ} 37'$ N., and long. $121^{\circ} 12'$ E. There are four small islets close to it, which protect the anchorage off the southwest end of the island from the easterly swell. Vessels should not anchor under these islands unless from necessity, as they have so much better anchorage either to the northward or southward of them. Fresh water may be obtained. There is an extensive fishing establishment on the island.

West, 11 miles from Pihke shan, is another group, of one large and four smaller islands. The largest is called Tungpwan shan 銅盤山 (i. e. Brass-basin I). Between this group and Pihke shan are five detached islets. The main is distant 15 miles to the westward of Tungpwan shan, the hills rising to 1000 or 1200 feet, with extensive plains between them, which are protected from encroachment of the sea by embankments. Between it and the main there are two groups of islands, the eastern of which will afford secure shelter in the NE. monsoon; a fleet of junks, probably from Wanchow foo, took shelter here during a northeasterly gale. The main land opposite is shoal to.

Eight miles, W.NW from Pihke shan, are the Tseigh islands, of which there are three, the North Tseigh 北策, the South Tseigh 南策, and the East Tseigh 東策, in the space between which there are clusters of rocks interspersed with reefs which cover at half tide. Vessels cannot go between these groups without great risk, as there may be many rocks not yet laid down.

The Tseigh islands form the south extreme of a very large and numerous group of islands. To the northward and westward of these

Coin I.	Tongtau shan.	Miaou I.	Hootow and Laouka Is.
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islands, between them and Takew 大瞿, is an excellent anchorage, sheltered from all winds, called Bullock's Bay; the best entrance into which is to the northward of the Tseigh Islands, between them and Pwanpien shan 半邊山. Here water may be procured, and bullocks of the best description were obtained from the natives in any quantity. The harbor may be known by a remarkable conical island, called Coin Island, (with three rocks N. $\frac{1}{2}$ W. of it,) which is the northeasternmost of this group, in lat. $27^{\circ} 50'$ N., and long. $121^{\circ} 15'$ E. W.N.W. of Coin Island is a flat island with rocks off its southern extreme, and two rocky islets to the westward, between which and Tongtau shan there is a safe passage in 8 fathoms.

Tongtau shan 洞頭山 the largest of the group, and forming the northern boundary of Bullock's Bay, is 6 miles long and $2\frac{1}{2}$ miles at its extreme breadth; the feature of its eastern face is high and precipitous: between it and Pwanpien shan, is a junk passage, not available for vessels.

North of Tongtau shan, there are two large islands Miaou shan 尾岬山 and Chwangpien shan 狀元山. The channel between them is shoal, having only 3 fathoms; between Miaou shan and Chwangpien shan, the channel is too narrow for a ship. The extent of the two islands together is 9 miles.

N. 55° W., 8 miles from Miaou shan, is the entrance of the Wanchow foo 温州府 river, with an island in the mouth of it. The inhabitants of Tongtau shan report that the approach to the entrance is very shallow. S. 65° W., 5 miles from Miaou shan, is a dangerous rocky shoal. We found on approaching the main from Miaou shan, that the depth of water decreased at 4 fathoms. To the northward of Miaou shan, are two large islands called Hootow shan 虎頭山 and Laouka shan 九麕山, with two small islands between them. The channel between Miaou-shan and the main is shoal; and vessels intending to enter the river Ngau which leads to Wanchow foo, must pass to the northward and eastward of that island, and between it and Hootow shan, off the south point of which is good anchorage; from thence the entrance to the river bears N. 66° W., 6 miles, and will be known by an isolated range of hills, with a square fort at their east end, and a small walled city at the west end. The depth of water varies from three to four fathoms in the channel, which is more than a mile wide; but the mud dries upon each side of you and shoals suddenly. Having passed the range of hills, keep the left bank of the river or north shore on board until the first hill on the flat island on the south side of the river bears SW. by S., when you will have passed a middle ground, which is half a mile from the south shore, and $1\frac{1}{2}$ mile to the E.N.E.

Wanchow River. Pe shan. Taluk shan. Seaoluk shan. Nanpai shan.

of this hill;—(the highest peak of Hootow shan on with the south foot of the hills at the entrance bearing E. 3° S. will place you on its north edge;—then edge over to mid-channel, passing a large city on the north side, and gradually haul in for the first point on the south side, at which the hills come down to the water's edge: keep that side on board, passing a point with a circular fort and a building like a jar upon it, close.

Do not go above 2½ miles beyond the Jar point, as the water shoals, and the channels become too intricate for explanation; you will then be in from 3½ to 7 fathoms water, and 5½ miles from the city of Wanchow foo, which is on the south side of the river. The water of this stream contains a great deal of sediment, and is not used by the inhabitants for culinary purposes.

To the northward of Hootow shan is a deep inlet, running back 20 miles, in the southern parts of which there is good anchorage, but the upper end is all shoal excepting a narrow channel, which forms the island of Woksing, and comes out opposite to Taluk shan.

Two and a half miles to the southward of Laouka, there are four cliff islets, and half a mile from the south point of it is another islet. The "Plover" passed between these, and anchored to the westward of a small islet on the southwest side of Laouka; in this bay the water shoals suddenly from 19 to 6 fathoms.

N. 75° E., 17 miles from Laouka, is Pe shan 披山 the easternmost island of the next group, lying in lat. 28° 5.5' N., and long. 121° 31.8' E. It is three miles long from east to west, has three rocks on its northern face, and two islets on its southern. Northwest from it is a sugar loaf island, with a small one close to it, and W. by N., 1½ mile, is another low level island.

Taluk shan 大鹿山 is west from Pe shan, 5½ miles; this island is 771 feet high, and affords good shelter on its western side in 3 to 4 fathoms; its eastern face is a high and precipitous head.

Seaoluk shan 小鹿山 are three islands, 1½ mile south of it; between the two the depth of water is 8 fathoms. To the west of Taluk shan, 3 miles, is Chinke shan 鷄冠山 which has a large and populous town on it. To the north of Taluk shan, 2 miles, is another island, which is also populous. Chinke shan faces a deep bay on the main.

Northwest, 24 miles from Taluk shan, is a high conspicuous mountain on the main; the sea washes the foot of it, but the entrance to the sound was not explored. To the westward of Seaoluk shan, distant 6 miles, is Nanpai shan 南排山, an islet. On the point to the westward of Nanpai shan, there is a large and populous village. Heächuh shan, the southernmost island of the Taichow group, bears N. 50° E., 27 miles from Pe shan. N. 45° E., distant 16 miles from Pe shan, is a small island, with a reef running off its

Shetung. Teaoupung. Chikhok I. Heächuh shan, one of Taichow Is.

southern end, and which is the eastern island of a group; it is in lat. $28^{\circ} 15.8' N.$, and $121^{\circ} 44.5' E.$

Southwest, 2 miles from this island, are four small peaked rocks, with rocks awash between them. West, $2\frac{1}{2}$ miles, is the island of Shetung mun 石塘門, having many small rocky islets nearly joined to its southern extreme, and a reef to the westward of them. A vessel may get very good shelter under this island, unless the wind is far to the eastward.

Between this island and Teaoupung mun 吊邦門 are two islands; the eastern passage of the two is a mile wide, and has $3\frac{1}{4}$ fathoms. Northeast of the centre island are three small islets, with a reef extending from the east end of the northernmost. To the southward of the roadstead are four islets, the largest of them is called Sanshe shan 三蒜山. The channel between them and the main is a mile wide, and has $4\frac{1}{2}$ fathoms through it. The point opposite to these islets is called Chinseu shan, and forms the southeast horn of a shallow bay, and is connected with the main by an isthmus occasionally overflowed.

Through the Teaoupung mun all the coasting trade passes, and from the number of towns erected on this barren headland, it would appear that it is a stopping-place for the numerous junks that pass. When the "Starling" anchored in this roadstead, there were nearly 100 sail of junks at anchor. They all weighed together, and passed through the Mun to the northward.

North, 6 miles from the easternmost island off the Teaoupung mun, is the island of Chikhok 積穀山 in lat. $28^{\circ} 22.4' N.$, and long. $121^{\circ} 42.2' E.$ It is 760 feet above the sea, and bears S. $58^{\circ} W.$, from the anchorage at the Taichows. It rises abruptly, and has a most remarkable broad yellow stripe on its southeastern side, forming one of the best leading marks for the coast. There is an islet, $1\frac{1}{2}$ mile W.N.W. from it, off the north end of which there is a half tide rock. Westerly from Chikhok is a crooked island, under which there may be shelter; but all the channels among the group to the west of it are shoal, none affording shelter to vessels drawing more than 12 feet.

East of Chikhok, distant $9\frac{1}{2}$ miles, is Heächuh shan, 下竹山 the southern island of the Taichow group, in lat. $28^{\circ} 13.3' N.$, and long. $121^{\circ} 55.2' E.$ This group extends 9 miles in a northerly direction from Heächuh shan; it consists of two large and ten smaller islands. Between the two large islands is an excellent harbor, the approaches to which, both from the eastward and westward, are free from danger. The best anchorage will be found southeast of the island, lying off the southwestern extreme of Shang-tachin shan 上大陳山, which is the northern large island. The bay to the northward of this is too shoal for anchorage.

<i>Hea-tachin shan.</i>	<i>Shang-tachin shan.</i>	<i>Tung-chuh seu.</i>	<i>Chuh seu.</i>
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Between Shang-tachin shan and the small island, $1\frac{1}{2}$ mile to the N.NE. of it, there is a safe passage. Several watering places will be found on Shang-tachin shan, but the supply from any one of them is not very abundant. The southern large island, called Heä-tachin shan 下大陳山 is the highest, its elevation above the sea being 750 feet. It is well inhabited; a couple of bullocks and other stock were obtained here.

There are four islands and two reefs to the southward of it. The southernmost island, or Heächuh shan, has a remarkable finger rock off its southern side. The western rock lies S. 22° W., $3\frac{1}{4}$ miles from the highest part of Heä-tachin shan, and is seen at all times of tide. N. 41° E., $4\frac{1}{2}$ cables from the above rock, is a reef that covers at high water; it bears from the peak of Heä-tachin shan, S. 20° W., $2\frac{3}{4}$ miles.

There is a good channel west of the Taichow group, and to the north of Chikhok are numerous islands, many of which are joined by the mud at low water.

N. 55° W., distant 7 miles from the northern island of the Taichow group, are two islands close together, that will be mistaken for one except on an E.NE., or W.SW. bearing. Junks take shelter under the western point in strong northeast winds; off the northeast and northwest points are rocks; a reef also extends off its southeast end. Two and a half miles to the eastward of these is another cliff islet, which is the easternmost of the group. The channel between these islands and the Taichows is free from danger. The mainland is distant 9 miles from the above islands, and the depth of water between the two is from 6 to 3 fathoms, shoaling gradually towards the coast, which is very low, and at low tides dries a long way off from the shore.

North, 10 miles from the northern Taichow, is the easternmost of a large group in lat. $28^{\circ} 42.2$ N., and long. $121^{\circ} 55.1$ E., called Tungchuh seu 東機嶼. Shelter may be had under it on its south side, but there is always a heavy swell which renders riding there very unpleasant. There are several rocks and islands within two miles of its southern, and three islets on its northern, face. There are several large islands lying to the northwest, some of which would no doubt afford good shelter, but they have not yet been examined.

Seven miles, west a little southerly from Tungchuh seu, lies the island of Chuh seu 竹嶼 with a sharp cone, 670 feet above the sea, over its southern point. Midway between the two is a cluster of rocks, four in number; and S.SW. from Tungchuh seu are two islets, with detached reefs bearing from it E., two cables distant, and N. by W. four cables. On the same bearing from it, 3 miles, are two islets, with a reef off the eastern end of the southernmost. From Chuh seu there is a solitary cone island, S. 60° E., $2\frac{3}{4}$ miles.

Passage to Taichow foo. Hishan Group. Patahecock I. Cape Montague.

Good anchorage, with a convenient and abundant watering place, will be found under and to the southwestward of the peak of Chuh seu in 6 fathoms, between an island with a reef off its northeast point and Chuh seu. On the peak at the northwest end of Chuh seu is a lookout and three chimneys, from whence they communicate by signals with Taichow foo 台州府. The entrance to the river leading to the city, called by the Chinese Hoomun, is west 17 miles from the peak of Chuh seu. The water shoals gradually for the first 8 miles to 2 fathoms, after which there are not more than 9 feet at low water until you are within the headland, when it deepens to 3 and 5 fathoms. The tide rises in the neighborhood from 18 to 20 feet.

The channel between Chuh seu and the main appears to be shoal, with several rocks covered at high water. Vessels therefore ought to pass to the eastward of the whole group until the inner channel has been examined.

South of Chuh seu, there are several small islets, with safe passages between them. There are several rocks and islands to the northward towards Sanmoon bay, which cannot now be described, not having been sufficiently examined.

N. 62° E. from Tungchuh seu, is the Hi-shan 黑山 group, distant 17 miles; it consists of 3 inhabited islands and 8 barren rocks, extending 4 miles in a north and south direction, and 2 miles east and west. The southernmost is the largest, and makes like a saddle. It is 320 feet high, and is in lat. 28° 50.8 N., and long. 122° 14.4 E. The rocks are steep, with remarkable cliffs. The sea has undermined the northernmost one so much that it bears some resemblance to a large mushroom. The inhabitants, who are Fuhkien men, called this island Ung shan. The depth of water in the vicinity is 20 fathoms; they are too small and too detached to afford much shelter. The inhabitants are all fishermen, from whom excellent fish may be obtained. There is also a fine stream of water on the island, but it would be difficult to get at it. Five miles NE. from it, a reef is reported to have been seen.

North from the highest of the Hishan islands, distant 32 miles, is Patahecock 八字角 the southernmost of the Kew shan 韭山 or Quesan group.

N. 25° W., distant 22 miles, is Tantow shan 潭頭山 or Cape Montague, in lat. 29° 10' N., and long. 122° 2.5 E. It is an island separated from the main by a channel varying from one to 1½ mile wide. It is 738 feet high, and nearly divided into two parts, the connection being a low shingly isthmus.

Four miles to the southward of Cape Montague, and nearly attached to the main, is a small islet with a reef off its eastern point. Twelve miles S.S.W. of Cape Montague, is Leaming, forming the northern and eastern points of Sanmoon 三門 Bay, having a rock off its southwestern end.

<i>Sanmoon Bay.</i>	<i>Albert's Peak.</i>	<i>St. George's I.</i>	<i>Bangoa rocks.</i>
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South of Cape Montague, and 3 miles from the coast, are four islets; the southern is 9 miles from the Cape, the others are severally 3, 5, and 7 miles distant from it, with good passages between them to enter Sanmoon bay.

Sanmoon bay will be readily recognized by a most remarkable thumb peak, called by the opium vessels that frequent this bay, Albert's Peak, and by the Chinese 'Ta-fuh-tow 大佛頭 (*i. e.* Budha's Great Head or point); it is about 800 feet high, and is in lat. $29^{\circ} 5' N.$, and long. $121^{\circ} 58.5' E.$

S. $38^{\circ} W.$, $2\frac{1}{2}$ miles from Leaming, is Sanche shan 三岐山 or Triple Island, the depth between the two being 10 or 11 fathoms. Vessels entering, either to stop a tide, or driven in by weather, will find good shelter from the northeast monsoon, to the westward of Leaming. Care, however, must be taken when standing into this bay, as it shoals suddenly. If the north peak of Leaming is not brought to the southward of east, there is no danger; it is all soft mud in the bay.

Due west of Leaming, 6 miles, is a conical island, with a reef off its south end.

Tafub-tow, or Albert's Peak, is situated on an island to the northward of this half a mile, but the channel between has many rocks. In the northern extreme of the Bay, between Leaming and Albert's Peak island, is a small entrance into Sheipoo.

Having rounded the conical island, St. George's I., or Ching shan, will be seen, bearing NW. 4 miles. The bay shoals gradually as you approach it, and the anchorage, half a mile south of it in 3 fathoms, is secure in northeast winds. There is a well of good water on the island, but it is not easily got at nor plentiful, and vessels in want of water will find it more convenient to anchor to the eastward of Albert's Peak, where water can be easily obtained. The bay to the northward of St. George's Island is shoal, and full of rocks; it extends a considerable distance. The isthmus between it and Nimrod Sound, or Tseängshan keäng 象山港 is only 7 miles. There is an entrance into Sheipoo, 4 miles to the north of St. George's Island, which is frequently used by junks.

Westward of St. George's Island, 4 miles, is a group of islands with many sunken rocks off them. The mainland is distant 3 miles to the westward of this group, and rises immediately from the sea to the height of 900 to 1000 feet, forming a continuous range along the coast. Patahecock bears from Cape Montague, N. $36^{\circ} E.$, $15\frac{1}{2}$ miles.

Vessels bound for Sheipoo Roads may pass close to the northward of Cape Montague, and run in due west for the two forts which will be seen on the summit of the island forming the entrance to Sheipoo.

North of the roadstead are 3 islands. South, 3 cables from the eastern end of the centre island, Wangche shan 黃芝山 are the

<i>Cliff I.</i>	<i>Sheipoo Roads.</i>	<i>Tungmun.</i>	<i>Rock near Cape Montague.</i>
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Bangoa rocks, which always show; there is deep water close to them. To the westward of Bangoa, the water shoals off the centre island to $2\frac{1}{2}$ fathoms, 9 cables from the land, to avoid which do not bring the higher fort to the southward of west.

Cliff Island, or Seao-seao, lies nearly in the centre of the roadstead; anchorage will be found off the northwest end of it in 4 fathoms mud; there is always a considerable swell rolling in with a strong wind. Vessels passing between Cape Montague and the main should keep to the eastward of Cliff Island, and pass between it and a rock, 7 cables further to the eastward. The deep bay on the western side of Cape Montague is shoal, but the southwest point is steep to.

A reef of rocks extends from the westward of Cliff Island, and the channel between it and the main has only 3 fathoms in it. South of Cliff Island is another islet; the ground between is foul.

From the roadstead into Sheipoo 石浦 harbor are three entrances, all of which are very narrow with rapid tides and chowchow water, rendering the navigation dangerous for ships. Two of them are formed by Tungmun 東門, the island on which the forts are situated. The third entrance is $1\frac{1}{4}$ mile to the southward of Tungmun, and is the best of the three.

At the entrance to it is a small flat island, with a reef of rocks extending easterly; pass to the northeastward of this island, as there is a reef to the westward between it and the main. The town is situated on the main, forming the north boundary of the harbor; it is walled, but the walls are in a most dilapidated state. The houses and shops are not good. It derives its importance from its being a convenient port for the coasting trade. At high water the harbor has the appearance of a splendid basin; but at low water the mud dries off shore a long distance, giving it the appearance of a river.

At the western extreme of the harbor, is a narrow passage into Sanmoon Bay, and midway between this passage and the town is a large island. South of this island is another narrow passage into Sanmoon Bay.

N. 36° E. from the highest part of Cape Montague, $7\frac{1}{2}$ miles, is a very dangerous wash rock; it is as near as possible half-way, between Patahecock and the Cape.

*Bar of the Min.**Rees' Rock.**Channel into the River.*

Section 4.

SAILING DIRECTIONS FOR THE RIVER MIN.*By Lieut.-Com. John Richards of H. M. Brig Saracen.*

These directions are intended to accompany the chart made by Lieut. Richards, but they will furnish useful hints to the navigator without it.

The best time for entering the River Min is from flood to half ebb. There are 15 feet on the Outer Bar, and 13 feet on the Inner Bar, at low water spring tides; and at low water neaps, 19 feet and 17 feet respectively.

When the North Sands begin to dry, there are barely 16 feet on the Bar. At low water springs, they are about 3 feet dry; at neaps, they do not show.

In fine weather, the North and South Breakers appear from half ebb to half flood, under similar circumstances, the outer knoll seldom until after the last quarter; but in bad weather, a line of breakers extends from the outer knoll, right across to the North Bank, and a continuous line from the South Breakers to Black Head.

The first of the flood tide comes in from the NE., and setting with great velocity through numerous small channels, and over the North Banks, the great body of it (from Rees' Rock inside) sets across the Sharp Peak entrance of the river, straight for Round Island, gradually changing its direction for Ho-keanga as the tide rises. The first of the ebb comes from the direction of Round Island, and sets across the Sharp Peak entrance over the North Banks; as the tide falls, the stream takes the regular channel.

Outside Rees' Rock, the strength of the ebb runs to the eastward until nearly low water, when it changes its direction to the SE. The flood tide now coming in from the NE., turns the stream off to the southward; and near the knoll, it runs strong to the S.W. for 3 hours, changing its direction to the westward as the tide rises; after half flood, the stream sets in for Round Island, and abates considerably in strength.

The Channel north of the outer knoll (from the numerous patches) is not safe, and ought not to be attempted by large vessels.

To run for the South Channel, the Southern Breakwater Rock, nearly in line with the south part of the Middle Dog, is the mark generally used in cloudy weather by vessels frequenting the port. High Sharp Peak, open to the southward of Sharp Island Peak, is a good mark to lead in between the Knoll and South Bank until Triangle Head comes open of the small black rocks off Sand Peak Point, or until the North Breakers bear north; then haul up NW. or N.N.W., (according as ebb or flood is running,) and crossing the outer Bar, gain the deep channel to the northward.

*Guides over the Inner Bar.**Kinpai Pass.**Woga Pt.*

If passing to the north of the Nine Feet Patch, the sharp shoulder should be well open to the northward of the Sharp Island Peak, before Sand Peak comes on with the middle of the Black Rocks off the point. If passing to the southward, the Sharp Shoulder should be kept a little open to the southward before passing that line of bearing.

When Sand Peak appears well open to the right of the Black Rocks, Sharp Shoulder may be brought in line with Sharp Island Peak, gradually opening the Shoulder to the southward, as Serrated Peak comes on with SE. tangent of Woufou, which now becomes the leading mark until the middle of Brother A. comes on with the right high tangent of Brother B., (beacons are proposed to mark these spots,) with which cross the Bar, steering a midchannel course when Round Island comes on with SE. tangent of Woufou.

Small vessels turning in over the Inner Bar, will find the following marks useful:—stand no nearer the North Bank, than Temple Point in line with Sharp Peak point; nor nearer the SE. side of Ho-keanga Bank, than Sharp Island Peak on with the middle of Sharp Point bluff; nor to the NE. side of Ho-keanga Bank, than to bring the right high tangent of Brother A. in line with the left high tangent of Brother B.

There is good anchorage in $5\frac{1}{2}$ fathoms, stiff mud, outside the Inner Bar, with Brother B. in line (or a little open) of Sharp Peak point, and Rees' Rock in line with Black Head.

Sharp Island Peak kept open of Woga Point, clears the six feet rock off Temple Point; shut the Sharp Peak in behind the high land of Woga, and you can go inside the Temple Point Rock.

In the NE. monsoon, the high land of Woga in line (or a little open) with Temple Point, is a good line to anchor on; in the SW. monsoon, Woga Creek is the best anchorage.

The Kinpai Pass is dangerous to strangers, particularly at or near the spring tides, for the current meeting the rocks with great force, causes eddies, that occasionally run across the stream. With the flood a dangerous eddy extends from Kinpai Point in the direction of the Ferry; and for this reason the passage north of the Middleground is considered the best.

After passing White Fort, close with the northern shore; it is very steep, and may be approached with safety. The apex of Pass Island in line with White Fort Bluff tangent, is a near clearing mark for the shoulder of the middle; it is therefore recommended to shut Pass Island in altogether until past that point, opening it again immediately afterwards.

The danger of this passage is in passing the shoulder, which forms a sharp angle of the bank, with only one foot at low water spring tides, and 4 fathoms close to; from this point to the opposite shore, the distance is only $1\frac{1}{4}$ cable. After clearing this point, in passing either up or down, the tide tends rather to set you from the bank into the stream.

<i>Tongue Shoal.</i>	<i>Scout Rock.</i>	<i>Spiteful Rock.</i>	<i>Anchorage.</i>
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The high Serrated Peak in line with Ferry-house, leads through between the Middle and Quantao Shoal, and is a good line for ships to anchor when coming down the river, and waiting for an opportunity of dropping through the Pass.

The Tongue Shoal is steep to, and has seven feet near its northern extremity. This part is cleared by keeping the Ferry-house midway between Kinpai Bluff and the Tower, until the apex of Kowlooi Head comes on with Half-tide Rock.

Between Half-tide Rock and Tintao, the bottom is very irregular. The Scout Rock is the end of a ledge projecting 25 yards from Couding Island, with seven feet near its extremity.

The Spiteful Rock shows at low water; it is part of a rocky ledge projecting about 30 yards from the Island. To pass between it and Losing Spit, do not shut in Younoi Head with Flat Island until the black cliff head (marked by a white spot) comes in line with the north tangent of Twaisee Island.

The Pagoda Rock is two feet dry at low water spring tides.

The best anchorage is from this rock for about half a mile above it. Should this anchorage be full, I would recommend vessels to anchor pretty close to the south shoulder of Losing Island, where they will be out of the strength of the tide.

In dropping through the Mingan with the ebb tide, it is necessary to guard against a dangerous eddy, setting from the point above Couding Island on to the Scout Rock.

Section 5.

NAVIGATION OF THE RIVER MIN.

These directions were prepared by Capt. Collinson in 1846 to assist seamen in taking their ships into the River Min. They should be read in connection with his remarks on pp. 49—51, especially the paragraphs relating to the positions of the White Dogs, Changche shan, and Matsoo-shan. Pilots may sometimes be obtained at the White Dogs, but their conduct must be carefully watched. In connection with the Directions contained in the last Section, this will furnish all the hints necessary in going up to Fuhchau.

Entrance to the River Min. To the eastward of the north horn of the channel at the entrance of the river is a reef which shows only at low water; the bearings from it are:—Matsoo shan peak N. 54° E.; Sea Dog N. 88° E.; White Dog peak S. 45½° E.; Sand peak S. 59° W.; Sharp Peak N. 71° W.; and Rees' Rock in line with the southern peak of Square Peak Island.

Rees' Rock is low and difficult for a stranger to get hold of, unless from the masthead. There are, however, other leading marks, which, unless the hills are obscured, will form good marks to enable a seaman to ascertain his position. On the north side of the river is a

<i>Rees' Rock.</i>	<i>Leading marks in.</i>	<i>Channel up to the Brothers.</i>
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remarkable sharp peak; and a square (or double peak) on the south; nearer than the latter, Round Island will be seen, and to the southward of it a sharp sandy peak, bearing about S. 68° W. This latter is the only peak that can be mistaken for the sharp peak on the north side, and the bearing of the White Dogs will at once obviate the mistake, if referred to. The channel between the breakers is two miles across at the entrance; nearly in mid-channel is a knoll which at some seasons has only nine feet over it, and at other periods thirteen feet. The leading mark in, to pass upon the north side of it, is to bring Rees' Rock in line with Square Peak, bearing N. 81° W. At present, however (1846), the channel south of it has more water, and is to be preferred, the leading mark for which is to bring Rees' Rock in one with the first point under and to the right of Square Peak, bearing W. N. W. Having entered, steer so as to pass one mile north of Rees' Rock; the breakers will show on each side of the channel if it be near low water and there is any swell; by skirting the northern side the deepest water will be found, and it is necessary to take great care that the vessel is not set across the channel, as the tide rushes across with great force between the sand banks, the ebb setting to the northward and the flood southerly.

The course from Rees' Rock is N. 68° W., and in going up keep the two islets (called the Brothers) on the face of Ho-keanga in one, which will carry you in mid-channel until you are abreast Sharp Peak Point, when a N. W. by W. course may be shaped for Temple Point, which is upon the north bank of the river, and will be known by the trees and Joss-house upon it. In the channel without Rees' Rock, the depth of water is 2½ and 3 fathoms; between Rees' Rock and Sharp Peak Point there is a hole with 5 and 6 fathoms, where vessels may stop a tide and find tolerable shelter; Sharp Peak Point should not be passed nearer than a cable; the bay west of it is shoal, and under the peak the two fathom line extends nearly one mile from the shore. The mud also extends southeasterly from Ho-keanga nearly 1½ mile. Vessels beating in this passage must therefore keep the lead agoing. From the West Brother the mud extends westerly one mile, and upon its north edge is a patch of rocks which is covered at quarter flood. The West Brother bears from them S. 74° E., and the Temple N. 12° E.

South 17° W. from the Temple, 3¼ cables, is a knoll with 2½ fathoms on it. Sharp Peak seen over the lower part of Woga Point will place you on it. From the Temple to Kin-pai mun is not quite two miles W. by S. At the entrance of the passage are two islets; pass between them and keep over towards the south shore to avoid a rock which lies W. by S. ½ S. from the northern islet. The channel is not quite two cables wide, and should only be attempted at slack tide, as the chowchow water renders a vessel unmanageable.

To the westward of Kin-pai Point is a rock having 13 feet over it at low water; the bearings upon it are Kin-pai point N. 66° E., fort

<i>Kin-pai pass and rock near it.</i>	<i>Ferry House.</i>	<i>Min-gan town.</i>	<i>Pagoda Pt.</i>
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on the north shore N. 32° E.; ferry house S. 48° W.; highest hill over Kin-pai Point S. 30° E. Kin-pai Point in one with the north end of Passage Island (the northern islet at the entrance), bearing N. 56° E. will place you south of it, which is the best side to pass, as the channel this side is $1\frac{1}{4}$ cable wide, while between the rock and the tail of the spit to the westward, the distance is only half a cable. Having passed the point, keep the southern shore close on board to avoid the middle ground, the channel hereabouts being sometimes under two cables; when abreast of the ferry house which is $1\frac{1}{2}$ mile above Kin-pai, and on the right or southern bank, edge over to the northern shore, passing Wedge Islet at a cable's length; there are two rocky points above it which are covered at high water, and extend a cable from the embankment. The rock and sudden turn in the Kin-pai pass, render the navigation exceedingly awkward; but if vessels wait for the last quarter flood they will be enabled to run up on the northern shore.

Above the ferry-house and on the same side of the river is Tree Point, the shore on that side between them being shoal too; a half tide rock bears from the Tree Point N. 9° W. $4\frac{1}{2}$ cables; when on it the ferry-house is in the line with Kin-pai point. This reach runs SW. by S. and NE. by N.; at the distance of six miles from Kin-pai, the river narrows again to $3\frac{1}{4}$ cables, the hills rising abruptly on either side.

The town of Min-gan 閩安 is on the left bank of the river one mile within the strait; the river continues narrow for three miles, and the depth of water being generally above twenty fathoms, vessels, unless with a leading wind, should keep a boat ahead, for the tide is apt to set you on either shore. Rather more than half a mile above Mingan, and on the same side of the river, is an islet crowned with a fort. At the upper end of the narrows, are two islets upon the right bank; in going up leave them upon your port hand, passing close to the northern point of the outside one, which is steep to; but there is a sunken rock on which the "Spiteful" struck, three fourths of a cable from its northwestern shore; W.N.W. from the island, two cables, is a shoal patch of nine feet at low water.

Having passed the island, keep along the right bank, gradually hauling up for the Pagoda of Lo-sing; S. 12° E. from it, rather more than two cables, is a sunken rock which shows at low water spring tides; to avoid which, round the Pagoda Point close, and come to opposite the sandy bay above the Pagoda. The river is only navigable for vessels three quarters of a mile above the Pagoda. There is a sand bank half a mile to the northeast of the Pagoda, and three fourths of a cable from the shore.

H. M. S. "Espeigle" struck on a rock, lying N. 58° E. $\frac{1}{4}$ mile from the NE. extreme of the island at the S. end of the Gorge, having $1\frac{1}{4}$ fathoms at low water; the Losing Pagoda bears S. 48° W., and the N. end of Pagoda South island S. 74° W.; W. by S. from it, half a cable, is another rock with 2 fathoms on it.

<i>Pescadore Is. occupied by the Dutch.</i>	<i>Productions.</i>	<i>Present Population.</i>
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Section 6.

SAILING DIRECTIONS FOR THE PESCADORES.

By Capt. Richard Collinson, C. B., R. N.

This group of islands was once deemed of great importance in conducting the trade with China, and a forcible settlement was made on them by the Dutch in 1623, after their unsuccessful attack on Macao in 1622. The authorities of the opposite coast of Fuhkien, at Amoy and Fuhchau, unsuccessfully endeavored to drive out the new-comers; but finding this means futile, they urged them to leave it for the richer acquisition of Formosa. This was at first declined, but after a series of alternate negotiations and ruptures, hostile attacks and specious treaties, between the parties, very characteristic of those times, and the landing of 4000 Chinese troops to garrison a fortress on the largest island of the group, and thus prevent all trade, the Dutch agreed to move over to Formosa, where they built Fort Zeelandia. Their conduct had been so harsh towards the natives of the Pescadores, and such prisoners as they had taken, while holding possession of them, that the people on the main declined to trade much with them.

The Pescadore Group now forms one of the six districts which constitute the department of Táiwan fú, 臺灣府, or Formosa, and is called by the Chinese, in their statistical works, Panghú ting, 澎湖廳 or the district of Panghú; it is under the immediate government of a magistrate, a subordinate of the prefect, or chi-fú, of Formosa. He resides at Makung (Macon, as the place is called by foreigners), and has under his command a few hundred soldiers. It has been impossible to identify the Chinese names, found on the maps of the Tá Tsing Hwui Tien, with those on Captain Collinson's new chart. The Chinese have, in that work, given more than thirty islands, which they call *seu*, 嶼 but in this list they make no distinction between the larger and the smaller islands, nor between the islands and mere rocks or shoals. The largest is called Panghú, 澎湖; and from it the group seems to have derived its name. Captain Collinson has added the following memoranda:—

"Panghú is 48 miles in circumference, and Fisher's or West Island is 17. The want of trees, which the Chinese officers accounted for by the violence of the wind, and the absence of sheltered valleys, give the islands a barren appearance. The Barbadoes millet, however, is extensively cultivated and yields a very good crop; and between the rows of the millet the ground-nut is planted. In some spots, sheltered by walls, the sweet potato is raised and a few vegetables; but for the latter and for fruits the inhabitants depend principally upon Formosa, the intercourse with which, during the summer season, is very frequent. Pine-apples were bought at the rate of four and five for a mace, and vegetables were equally cheap. During the winter season, however, two months sometimes elapse without the arrival of a junk. Bullocks and poultry were abundant; the former are used both in the cultivation of the soil and the collection of the crop, for which latter purpose a rude cart is used. The population of the two larger islands was stated to be 5000, and that of the whole group 8000; the magistrate stated that he had 2000 troops, including militia, and 16 war-junks under his command."

<i>List of places in the Pescadores.</i>	<i>Number of islands.</i>	<i>Macon Town.</i>
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A complete list of the Chinese names, as they are found in their statistical works is here given in the court dialect, with the literal meaning of the names. A few of these can be identified with those on the surveyor's chart.

Hien Tsiaú, 險礁	Dangerous Rocks	Sí	西	West.
Tá Lich, 大烈	Great Splendid.	Táu Kin,	頭巾	Turban
Siáu Lich, 小烈	Small Splendid	Sz' Kieh,	四角	Four Horns.
Kih Pei, 吉貝	Happy Pearl.	Tung Pwán,	桶盤	Water Basin.
Pei, 貝	Pearl	Yáng,	陽	Sun.
Kung Hoh, 空殼	Vacant Shell	Hwá,	花	Flowers.
Wán Pei, 灣貝	Crooked Pearl	Tá,	大	Great.
Kú Po, 姑婆	Great Aunt	Hiáng Lú,	香爐	Fragrant Furnace
Peh Peh Shá, 北白沙	N. White Sand	Chuen Pung,	船篷	Ship's Sails.
Nán Peh Shá, 南白沙	S. White Sand	Ki Lung,	雞籠	Hen-coop.
Peh Shá, 白沙	White Sand	Hú Tsing,	虎井	Tiger's Well.
Chung Tun, 中墩	Centre Dome	Má Ngán,	馬鞍	Horse Saddle
Siáu Tsing, 小倉	Small Granary	Tieh Chin,	鐵砧	Iron Anvil.
Tá Tsáng, 大倉	Great Granary	Pwán Ping,	半坪	Half Flats
Siáu Mun Táu, 小門頭	Small Passage Head	Páh Chau,	八罩	Eight Shades
Lán Pun, 藍笨	Blue Post.	Tsing Tsz',	碇仔	Warrior
Ting Kú Chí, 掟鉤齒	Saw Teeth	Tung Kih,	東西吉	Eastern Felicity.
Pang Hú, 澎湖	Dashing Lake	Sí Kih,	西吉	Western Felicity.

The Panghú or Pescadore Archipelago consists of twenty-one inhabited islands, besides several rocks. They extend from latitude 23° 13' to 23° 48' N., and from longitude 119° 16' to 119° 37' E. Their general appearance is flat, the summits of many of the islands being nearly level, and no part of the group 300 feet above the sea. The two largest islands are situated near the centre of the Archipelago, forming an extensive and excellent harbor between them. The western island of the two (Fisher's Island *) is five miles from north to south, and 3½ miles from east to west. On its SW. extreme is a light-house, 225 feet above the sea.

To enter the harbor pass half a mile to the southward of the Light-house point, and then steer E. ½ N. for Macon, which is situated on the north side of an inlet on Panghú, and will be readily

* In a collection of voyages in Dutch published in 1736, Fisher's I. is called D'Visser's I.

<i>Entrance to the Harbor.</i>	<i>Dome I.</i>	<i>Flat I.</i>	<i>Inner Harbor.</i>
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recognised by a citadel and line of embrasures. The large junks, waiting for a favorable wind to take them to Formosa, lie to the SW. of the town in 7 and 8 fathoms water, with a black rock, which is midway between Fisher's Island and Macon, bearing about NE. by N. In the "Plover" we ran into the inner harbor to the westward of Macon, passing between it and Chimney Point, and anchored with the latter bearing N. 54° W., distant six cables, which is also the width of the channel here. The junks belonging to the place lie close to the town, in a creek which runs back to the northward of the citadel. There is water sufficient for a square rigged vessel, but the harbor there is much confined by coral reefs.

Dangers to be avoided on entering the harbor. The only danger on entering the harbor by this passage, is a shoal with only nine feet upon it at low water, which lays NW. $\frac{1}{2}$ W. from the centre of Small Table island. Its SW. extreme, having 4 fathoms water, bears N. 50° W. 1.1 mile from the south end of Small Table, and its NE. limit bears N. 55° W. from the north point of the same island. The western limit bears S. 65° W. from Dome Island.

Dome Island lays N. by E. $\frac{1}{2}$ E., $1\frac{3}{4}$ mile from Small Table Island, and has a reef which is just awash at high water five cables to the westward of it. It is $2\frac{1}{2}$ cables from the SW. end of Panghú.

Flat Island. To the northward of Dome Island is Flat Island; which is two cables to the westward of the Chimney Point, and is surrounded by reefs which extend a cable's length from high water mark. Shoal water extends northerly $\frac{3}{4}$ of a cable from Chimney Point, on which is the old Dutch fort.

The inner harbor runs back three miles to the eastward of the Chimney Point: there are four coral patches in it, which are awash at low water spring tides, and may always be detected from the mast-head in time to avoid them. The westernmost bears from the Chimney Point S. 59° E., and from the Dome Hill (a remarkable elevation in the southern part of the harbor) N. 14° W. On the same bearing from the Chimney fort, and $2\frac{1}{2}$ cables further to the eastward, is another patch, on which the Dome Hill bears S.; and with the Dome Hill S. 5° W., and the Dutch fort N. 48° W. is another reef: also with the fort bearing N. 49° W. and the Dome Hill S. 32° W. is a fourth shoal. They are all small in extent and steep to.

The Chimney or Dutch fort, above alluded to, is on the southwest point of Panghú, which in some places is barely a cable's length broad, and so low that a vessel in this part of the harbor might be fired into from one outside:

Panghú extends 9.6 miles from north to south, and seven miles from E. to W.; it is however separated into three portions by narrow channels, which have only two feet at low water, and are further blocked by stone wiers. The whole of the western face of the island is fronted by coral reefs. Water was obtained from wells; the three which we used yielded three tons daily. Bullocks and fish were reasonable in price and plentiful.

<i>Panghú I.</i>	<i>Black Rock.</i>	<i>Fisher's I.</i>	<i>Tortoise Rock.</i>
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Shelter in the NE. monsoon in the Light-house Bays. Vessels in a northeast gale, seeking shelter will find smooth water between the Light-house and the SE. point of Fisher's Island, where there are two sandy bays, in the northern of which is a fort or line of embrasures, and in the southern is a run of water except during the dry season.

Black Rock.—The SE. point of Fisher's Island is a bold cliff 170 feet above the sea, N. 54° E. $1\frac{1}{2}$ mile from which is the Black Rock, part of which is always uncovered. Vessels passing to the north-eastward of it must keep within four cables, as the coral patches extend in this direction from Panghú.

Fisher's Island.—The coast line of Fisher's Island trends north from the SE. point, forming several small bays, which are steep to within a cable of the beach, until you are $2\frac{1}{4}$ miles north of the SE. point, when the reefs extend nearly three cables; to avoid which the fall of the SE. point must not be brought to the southward of S. 14° W. after Macon citadel opens to the northward of the Black Rock. The "Plover" lay beyond this point in 3 fathoms with the Black rock bearing S. 19° E., and the highest part of Centre island E. $\frac{1}{2}$ N. In the bay abreast of her was a good stream of fresh water.

The harbor beyond this point is much choked with coral patches. There is a passage out to the northward between Fisher's Island and Panghú for vessels of sixteen feet draught; to render it available, however, local knowledge is necessary.

Coral reefs extending from Panghú.—To avoid the coral reefs which extend from the shore of Panghú, do not stand further over on that side than to bring the Black rocks S.W.

Shelter in the southerly monsoon to the northward of Fisher's Island.—Shelter from southerly winds will be found in the bay formed by the northern ends of Fisher's Island and Panghú. The NE. point of the former is a table bluff, with reefs which cover at high water extending two cables northeasterly from it.

Tortoise Rock.—This rock, which is 2.1 miles from the NW. point of Fisher's, is nine feet above high water and is steep to. There is a shoal patch of two fathoms bearing S. 10° W. 0.7 mile from it; when on it the NE. point of Fisher's Island bears N. 36° W. On the western face of Fisher's Island is a reef which breaks at low water seven cables from the shore, which bears N. 14° E. from the Light-house.

Northern part of the Archipelago.—The Archipelago, to the northward of Fisher's Island and Panghú, does not afford any inducement for a vessel to enter it. The external dangers therefore will only be noticed.

Sand Island. N. 58° E. from the Tortoise Rock is Sand Island, which will be known by a hummock which rises on the low land in the centre of the island; off its SW. end is a rock, and the reefs extend northwesterly three cables from it. To the east of it half a

Low I.	North I. and Reef.	Organ I.	Round I.	Great Table I.
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mile is a flat black island, and to the north of it a cluster of stones, some of which are always above water.

Low Island. Low Island bears E.NE. from Sand Island. A long sandy point forms its southern extreme. From the north point the shoal water extends three miles.

North Island. North Island, which is nearly connected by reefs with Low Island, is one and a half mile from the north point of it, and has a house for the shelter of fishermen on it.

North Reef. The northern extremity of the reef uncovers at low water, and bears from N. 29° W. to N. 9° W. from North Island, distant 1.4 mile; from its west extreme which is steep to (for the lead gives no warning), Sand Island bears S. 20° W.; also from the west point of Low Island rocks extend towards the north reef. Sand Island must not be brought to bear to the westward of S. by W., until the west point of Low I. bears to the eastward of E. by S. There is a shoal patch N. 19° W. from Sand Island, and west from North Island, on which however we did not find less five than fathoms. Shelter from southerly winds will be found to the northward of these reefs and Low Island.

North-east Sand Island. From the northeast end of Low Island, Northeast Sand Island bears SE. by S. five miles. It is a small islet with a sand patch off its south cliff, and is surrounded with rocks, being nearly connected with the two islands to the south of it, the southern of which has a large village on it.

Organ Island. S. 16° E., three miles from Northeast Sand Island, is Organ Island; there is a reef bearing N. 37° E. one mile from it; when upon it Northeast Sand Island bears N. 34° W.

Ragged Island. Ragged Island bears SE. by E. 1.2 mile from Organ Island. The whole of the east coast of Panghú opposite to these five islands is shoal.

Round Island and Triple Island. The eastern extremity of Panghú is a low shelving point; 1½ mile from which is Round Island bearing from Ragged Island S. 20° E. 3.6 miles; and S. 6° E., 1.3 mile from Ragged I. is Triple Island. N. 59° W. from Triple, and S. 45° W. from Round, is a reef which covers at half tide; and between Round and Organ Islands are several over-falls. The SE. point of Panghú bears S. 52° W. from Triple I. Between the two are two bays with fishing villages, either of which would afford tolerable shelter in the northerly monsoon.

Great Table Island. It is aptly named, the summit being a dead flat 200 feet above the sea; not far from the SW. end is a sudden fall nearly to the level of the sea, giving it at a short distance the appearance of two islands; it is not quite two miles in an E. by N. and W. by S. direction, and is seldom three cables in width. Towards the NE. end was a good run of water in the month of June. The two fathom line extends two cables from its eastern extreme.

Small Table Island. Small Table I. lays a mile to the NE. of it; between the two there is from 12 to 19 fathoms water, and the dis-

<i>West I.</i>	<i>High I.</i>	<i>South I.</i>	<i>Reef I.</i>	<i>East I.</i>	<i>Rover Group.</i>
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tance from Small Table to the south point of Panghú is 2.6 miles, with from 2 to 32 fathoms water. Directions for avoiding the shoal off Small Table Island have already been given.

West Island. From Great Table Island, West Island bears S. 66° W. 10.5 miles; and from the light-house on the south end of Fisher's Island S. 40° W. 12 miles. It is two miles in circumference, and uneven in appearance.

High Island. South of West Island, 4½ miles, is High Island, which is dome shaped, 300 feet high, and ¾ of a mile in circumference. To the eastward of it one mile is a low flat island; between the two are several rocks, one of which rises to the height of 60 feet, with a remarkable gap in it; and S. 51° E. 1.7 mile from the summit of High Island is a rock nearly level with the water's edge.

South Island. South Island is two miles from E. to W., and ½ from N. to S.; the depth of water in its vicinity is 15 and 16 fathoms. On its SW. side is a reef of rocks extending six cables from the shore, within which is a small harbor for boats. On its eastern face are bold cliffs. The western extreme is a long shelving point. The highest part of the island is 260 feet above the sea. From it High Island bears NW. ½ N. nine miles; Reef Island NE. by E. ½ E., six miles; East Island, E. by N., twelve miles.

Reef Islands. Reef Islands are three in number, one of which is a remarkable pyramid. The other two are rather more than a mile each in circumference, and are connected at low water by a stony ledge. To the southward of them the reefs extend half a mile. South from the east end of the eastern island of the two is a pyramidal rock 80 feet above the sea. There is also a low flat rock nearly level with the water's edge. S. 33° W., 1 mile from the same place, and S. 45° E. from the east end, is a small peaked rock with a reef to the southward of it.

East Island. East Island lays east of Reef Islands, 8.2 miles. Between the two, and distant from the latter 5.2 miles, is a smaller island 1.6 mile in circumference, with a reef extending easterly, not quite a mile from its north point. East Island is 2.4 miles in circumference, and has a small islet five cables from its western shore.

Nine-foot Reef. The Nine-foot Reef bears N. 19° E. from the east end of East I.; when on it the Dome hill on Panghú bears N. 73° W. 10.7 miles; and Triple Island N. 29° W. 4.1 miles. The lead gives no warning, but if there is any tide the ripple will show it.

Rover Group. The Rover Group is composed of two larger islands and several rocks. The western of the two is two miles from N. to S. and one from E. to W. The summit is near the eastern shore, and rises like a dome with a large pile upon it. SW. from it 2.6 miles is the end of a reef, which extends westerly from the south point of the island. Its extreme shows at all times of tide. There is also a rock under the highest part of the island, bearing S. 70° W. from it, two cables from the shore. The NW. point of the island is not steep to, and off the NE. point is a rock which will always show. There is a channel between it and the point.

Passage between East and West Is. Tides. Astronomical Positions.

The distance between the E. and W. Islands is barely a cable wide, the former is a mile from N. to S., and 1.4 mile from E. to W. On its NW. face are two islets; in the bay to the southward of the southern a small vessel might take shelter in a northerly wind, taking the precaution not to stand too far in, as there is only 6 feet, 2 cables from the beach. On the west end of the island, which is a cliff, are three embrasures. Having passed between the two islands, in doing which the western island should be kept on board, a small rock in the centre of the channel to the southward will be seen. Pass to the eastward of it; but the channel is narrow, and the only excuse for a stranger using it would be his being caught at anchor to the northward of the two islands in a breeze from the northward, and unable to fetch clear either to the eastward or westward.

The west point of the east island is remarkable from an isolated cliff 100 feet high, which forms the most striking feature in the group; seven cables to the westward of which is a ledge of rocks, part of which is always above water. The islands are sufficiently large to afford shelter in either monsoon. The general depth of water on the southern shore is 7 and 8 fathoms, and on the northern 13 and 14. From the highest part of the Rover Group, the Light-house bears N. by W. $10\frac{1}{2}$ miles. The Reef Islands bear S. 8° E., 3.3 miles from the same place. The general depth of water on the western side of the Archipelago is 30 and 35 fathoms; there are however some places in which there is as much as 60. To the eastward of the Group the depth is 40 fathoms, and the current is strong. The tides are much affected by the prevailing winds; so much so that during the month of August we sometimes experienced a tide of four knots per hour on the flood, running to the northward, whilst with the ebb the current slackened for two and three hours, but seldom ran with any velocity from the northward. On the whole a person navigating in this neighborhood may safely allow, that the effect of the current and tide together will set him, according to the prevailing monsoon, seventeen miles in one tide.

Astronomical Positions of places in the Pescadores.

NAME.	SPOT.	LATITUDE.	LONGITUDE.
Observatory.....	Second point on north side of inner harbor.	23° 32.9 N.	119° 30.2 E.
Dome Hill.....	Summit.....	23 31.7	119 30.5
Light-house.....		23 33.6	119 24.7
South Island.....	Centre.....	23 13.5	119 22.4
High Island.....	Highest Part.....	23 20.	119 16.2
East Island.....	South Point.....	23 16.3	119 36.6
West Island.....	Highest Part.....	23 24.7	119 16.5
Nine-foot Reef....		23 28.6	119 41.5
Triple Island.....	Highest Part.....	23 32.1	119 39.5
NE. Sand Island.	Do.	23- 40.2	119 36.2
Tortoise Rock.....		23 40.9	119 27
North Reef.....		23 47.7	119 32.1
North Island.....	Highest Part.....	23 46.3	119 32.3

<i>Port Cock-si-con.</i>	<i>Sand-banks near it.</i>	<i>Ape's Hill.</i>	<i>Dutch Fort.</i>
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Section 7.

PORT OF TAIWAN IN FORMOSA.

By Lieut.-Com. John Richards, R. N.

These remarks are extracted from the China Mail, No. 530, where they were inserted by request of Capt Richards. He entered the port of Cock-si-con, Feb. 25th, 1855, and found no hindrance to the prosecution of his survey of this part of the coast from the Chinese authorities. There were 16 large junks at anchor in the port on his arrival.

All this part of Formosa is fronted by sand-banks elevated only two or three feet above high water; they run in lines generally parallel to the coast from two cables to half-a-mile broad, and are pierced at every mile or so by narrow channels, depths varying from seven feet and under. There is no vegetation in sight of the western sand-bar; the mainland of Formosa can only be seen in very clear weather from it, and the whole intermediate space seems to be an intricate mass of sand and mud banks and shallows, with occasional patches of sedge. These sand-banks are occupied by a few poor fishermen, whose miserable huts and bamboo rafts are the only relieving features of the dreary scene.

Port Cock-si-con can only be distinguished by a stranger by three larger clumps of huts than can be found in any of the outer sand-banks, and by the number of large junks generally at anchor inside.

Ape's Hill to the southward, and the South Pescadore Island to the westward, will be found useful marks to run in for the place. Cock-si-con bears N. 21° W. 30 miles from Ape's Hill, and E. by S. $\frac{3}{4}$ S., 26 miles from the South Pescadore. The old Dutch Fort of Taywan is just in sight from the anchorage, from which it bears S. 42° E., $7\frac{1}{2}$ miles. I made the south point of the entrance to the port to be in latitude $23^{\circ} 5' 52''$ N., longitude $120^{\circ} 05' E.$ Var. $0.33\frac{1}{2}' W.$; high water full and change 11h. 30m., rise of tide at springs about 3 feet, but very irregular.

This port is the outlet of several small shallow streams, which here unite and form a channel through the mass of sand-banks fronting the coast. This channel or port runs NE. and SW., and, taking the three-fathom line as its boundary inside, is $\frac{3}{4}$ of a mile long, and barely two cables broad, with $4\frac{1}{2}$ fathoms in the middle. It is therefore necessary to moor NW. and SE. The bar has 12 feet at L. W. springs; the deepest part is generally marked by the natives with bamboos, but as the channel is both wide and straight, and the bottom remarkably even, it is by no means difficult of access for vessels of 12 or 13 feet at high water. The "Saracen" sailed in with a draught of 13 feet 2 inches, but then the sea was remarkably smooth; and I think that generally vessels drawing over 13 feet

<i>Town of Taywan.</i>	<i>Low Coast.</i>	<i>Form of Ape's Hill.</i>	<i>Fishermen.</i>
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should not attempt to enter, particularly with any swell on. The tide from the Bar inside sets fairly through the channel, its greatest strength about a knot; outside the Bar the flood sets to the northward along the coast, the ebb to the southward; its strength varies in different positions, running with much greater velocity off the west sand-bar, on the edge of deep water than in the shoal water bight off Taywan, where it is occasionally variable in strength and direction.

Fresh water and stock are procured from the town of Taywan; and if a vessel should only require these articles, she will do better to anchor at once off the town, about $\frac{3}{4}$ of a mile from the shore; where, in $5\frac{1}{2}$ fathoms, with the old Dutch Fort bearing NE., she will find capital anchorage and good shelter from December to March. During the rest of the year the chances of southwest winds would render this position unsafe, and vessels should of course anchor further out.

At the distance of $1\frac{1}{2}$ mile NW. of the old Dutch Fort Zealandia, there is a large clump of trees on the outer sand-bar. The ruins of the old Dutch Fort are about $\frac{2}{3}$ of a mile inside the sand. It is about 60 feet above the sea level, and the only conspicuous landmark in this neighborhood; it can be seen 8 or 9 miles from a ship's deck. The principal town of the island of Formosa is two miles SE. from the Dutch Fort, and large junks trading to the place in the NE. monsoon, generally anchor off the Fort, and send their cargoes by this route to the city.

Here the main island of Formosa approaches within a mile of the sand-bars fronting the coast, and although it is generally marshy and flat, it is cultivated with rice, &c. The sand-bars from hence to the southward are occasionally clothed with bushes and grass, and are densely populated by fishermen, who appear to be well fed and clothed, and a happy and contented people. These fishermen pursue their avocation generally in divisions under the direction of particular chiefs, and their rafts, hauled up on the beach, placed in tiers on their sides, form a feature in the appearance of the coast. Wherever we landed we were treated with the greatest civility and deference, and our surveying marks, although sometimes made of an article most tempting to them, (white calico,) were never interfered with.

There is no remarkable feature in the coast until within 8 miles of Ape's Hill, where commence some low mud cliffs; and there is also a small piece of table land about a mile inland. The coast between the old Dutch Fort at Taywan and Ape's Hill is nearly a straight line of beach, pierced by four small streams navigable only for boats. Ape's Hill, called by the natives Ta-kow, bears S. 14° E., $22\frac{1}{2}$ miles from the Dutch Fort. It appears like a truncated cone, on a north and south bearing, and is 1110 feet high, sloping towards the land side, appearing at a distance like an island. Its apex I made in latitude $22^{\circ} 38' 3''$ N., long. $120^{\circ} 16' 30''$ E. NE.

<i>Whale Back Hill.</i>	<i>Saracen's Head.</i>	<i>Tides.</i>	<i>Provisions.</i>
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of Ape's Hill, $4\frac{1}{2}$ miles, is another remarkable hill, which, from its resemblance to a huge whale sleeping on the water, I named Whale Back; then N.NE. 12 miles, there is a small triangular-shaped hill, and a large detached piece of table land resembling a Quoin, on a north and south bearing. These are the only landmarks on this part of the coast (which is all very low), and of these Ape's Hill is the most useful, as it is frequently seen distinctly when all the others are shrouded in mist. From its summit to the southward, it descends in a gradual slope, and terminates in a huge nearly level block of a mole-like appearance, which, jutting to seaward for about 300 yards, forms a sheltered anchorage for small vessels in the NE. monsoon. This mole is separated from Ape's Hill by a deep chasm of 50 fathoms wide, and within this is the small port of Ta-kow-con.

The SW. part of the mole (a steep cliff) I named Saracen's Head. It bears S.SE. 34 miles from West Point, and 32 miles from Gull Point on the same line of bearing. It is in latitude $22^{\circ} 36' 15''$ N., long. $120^{\circ} 16' 41''$ E. Variation $0.34\frac{1}{2}'$ W.

The inlet of Ta-kow-con has a narrow bar of 11 feet depth at low water, extending from the south side of the entrance, curving to the NW. and N.NW. in the direction of Ape's Point; but directly this is passed, the water deepens to 4, 6, and 9 fathoms just within the port.

The entrance, though narrow, is steep to, and perfectly safe of approach, but unfortunately the anchorage within is so very confined that there is no room for a vessel to swing; it is therefore necessary to moor head and stern. The tides are also rather strong when near the springs, but this anchorage is susceptible of great improvement at small expense, and when Formosa is opened to commerce. this place must advance in importance. The coast included between the points of our survey we found perfectly safe of approach.

The subjoined information was obtained from fishermen and other natives of the coast by our interpreter:—

"The best season for ships to trade on this coast is during the NE. monsoon from November to March. The weather is generally boisterous in June and July, and tyfoons occur in those months. The sea stands at a higher level during the SW. monsoon than at the opposite period, and the Western sand bars are occasionally submerged. On this account the fishermen remove their huts to the mainland in April until the northeast monsoon sets in again."

This is important, if true, and would render the coast at that season peculiarly dangerous. The following are the prices we paid for refreshments at Ta-kow-con:—

Water very good (but cannot be readily obtained in large quantities, from the difficulty of transport) at 50 cents for 16 piculs 80 cattie, or 1 ton.

Bullocks, from \$4 to 6, according to size. Eggs, from \$1 for 300.

Pigs, " \$1 to 5 do. Rice, " \$1.25 to 1.75 per picul.

Fowls, " \$1 to 1.75 per dozen. Sugar, " \$1.25 to 2.50 do.

Ducks, " \$0.50 to 0.75 per dozen.

Fish and Vegetables at a very low rate.

<i>Kew-shan Group.</i>	<i>Patahecock I.</i>	<i>Islands near it.</i>	<i>Heshan Is.</i>
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Section 8.

SURVEY OF THE CHUSAN ARCHIPELAGO.

The following directions for navigating the Chusan Archipelago were compiled and published by Capt. R. Collinson, C. B., in 1841, from the surveys made by the officers of H. B. M.'s ships connected with the Expedition to China. It connects with the survey in Sect. 3, ending at Cape Montague, (see page 63,) and its more minute directions almost supersede those given in the last few paragraphs of that section.

THE 隹 山 Kew shan (or Quesan islands) are eleven in number, besides several rocks. The largest is three miles long, and its greatest breadth $1\frac{1}{4}$ mile; in some places, however, it is not more than a cable, or a cable and a half wide: the others are much smaller, varying from $\frac{3}{4}$ to $\frac{1}{4}$ of a mile in extent. They are thickly populated, probably to the amount of 1500 inhabitants, who principally subsist on fish. They have goats, pigs, and fowls. The sweet potato is cultivated upon most of the islands, and forms during the winter their principal article of food.

The geographical extent of the group is from lat. $29^{\circ} 21\frac{1}{2}'$ N., to $29^{\circ} 23'$ N., and from long. $122^{\circ} 10'$ to $122^{\circ} 16\frac{1}{2}'$ E.

Patahecock or Páhtszekioh. The south-easternmost island is called Patahecock, (八字角 Páh-tsze-kioh, or the 'letter Pah Point,' so named from its resemblance to the form of the character 八?) Its flat and table appearance will cause it to be easily recognized, when compared with the adjacent islands to the south, 黑 山 Hishan or Heshan, which are rugged and uneven. Four small islets lie off its northeastern shore, and one off the southern. The summit is more than 450 feet above the level of the sea, and in lat. $29^{\circ} 22'$ N., and long. $122^{\circ} 13.40'$ E. The northeastern islet of the group is a narrow cliff, an uninhabited islet. To the westward are four small islands, inhabited and cultivated; and north of them, three cables, is a flat precipitous rock; its colored appearance renders it remarkable, being composed of red porphyritic hornstone. This face of the island may be approached without danger.

The westernmost island is the second in size, and attains an elevation of 400 feet. The body of the large island lies due south from it. Between the two is a mud bank, gradually shoaling to the shore of the large island. By keeping the western extreme of the west island to the eastward of N.N.E., not less than 3 fathoms will be found, and good holding ground without much swell. The highest part of the large island forms a sharp peak near the western extreme, and is 490 feet high. The coast line of the island consists of high steep cliffs, with the exception of six small sandy bays.

<i>Holderness Rock.</i>	<i>Sunken Rock.</i>	<i>Cape Montague.</i>	<i>Half-tide Rock.</i>
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South, and separated by a channel a cable and a half wide, there is another island, which is also high, with steep cliffs. Off the western point is a half-tide rock, and a reef runs off from its south extreme.

Holderness Rock. The Holderness Rock lies N. 88° W., one mile from the highest part of this island. It has one fathom over it, and breaks occasionally. From it, the highest part of the western island bears N. 24° E.; a small peaked islet to the southeast, S. 52° E., and Patahecock table, S. 66° E., the reef of rocks, lying off the south extreme of the nearest island, being in line with it.

Sunken Rock. Another sunken rock, with only three quarters of a fathom on it, lies S. 20° W., three quarters of a mile from the summit of the island, south of the large Kew-shan, and N. 70° W. from Patahecock, the east extreme of the large Kew-shan, and N. 70° W. from Patahecock, the east extreme of the large island being in line with the east extreme of the nearest island, bearing N. 50° E. The inhabitants were civil, and readily sold their pigs, potatoes, and goats. Fresh water probably could not be procured in any quantity. During the expedition against Chusan in 1840, H. M. ship "Pylades" encountered three piratical junks here, one of which was taken and burnt. The inhabitants did not appear to participate at all in the crimes of these marauders, and expressed themselves well pleased at their being driven away.

Cape Montague. Several small islets lie off Cape Montague, (or 四招山 Szechaou shan), the depth of water close into them being 4½ and 5 fathoms. The Cape is in latitude 29° 10' N., and longitude 122° 5' E. A passage exists between it and the main, which is used by the junks. Between it and Buffaloe's Nose many deep inlets occur, which render the extremity of the continent doubtful.

Half-Tide Rock. The Half-tide Rock lays S. 32° W. from Patahecock, 7.8 miles, being in a straight line for Cape Montague, and from the Bear (an island called 大目山 Tamuh shan by the Chinese, with a sharp peak at its eastern extreme), S. 42° E., 11 miles. It is uncovered two thirds of the tide. High tide and smooth water sometimes prevent its being seen.

High Water. The time of high water in the neighborhood of the Kew-shan islands is 2h. 30m. before the moon's transit, and the rise and fall 14 feet. The change in the direction of the stream does not take place until 2 hours subsequent to the change in depth. The flood tide comes from the southward, and seldom exceeds 2 knots per hour. The variation of the compass (1840) is 1° 57' westerly.

Between the Kew-shan Group and the Bear, the depth of water varies from 3½ to 6 fathoms, gradually shoaling towards the latter. Two small groups of islands lie between the Half-tide Rock and the Bear, lying 5 miles from the main. From the NE. extreme of the Kew-shan islands, Buffaloe's Nose bears N. 53° W., 16 miles, and

The Whelps. Corkers. Tinker. Buffalo's Nose. The Ploughman.

a small rock called the Mouse (nearly level with the water's edge at high water) N. 24° W., 6 miles.

The Whelps. The Whelps form a group of four small islands, N. 70° W., 10 miles from the Kew shan.

Starboard Jack. Starboard Jack is a low flat reef with two rocks off its eastern end, N. 47° W., 10 miles from the Kew shan.

Corkers. Between Starboard Jack and the outer rock of the Corkers, (a number of isolated reefs lying between the Whelps and Buffalo's Nose,) the distance is $3\frac{1}{2}$ miles, with a depth of from 5 to 6 fathoms. The outer rock of the Corkers is occasionally covered, and bears S. 31° E. from the extreme of Buffalo's Nose. Two islets, a cable's length farther to the westward, are always above water, and will give sufficient warning should the sea not break on the outer rocks.

Tinker. N. 20° E., $1\frac{1}{2}$ mile from the Starboard Jack, is the Tinker, a steep cliff rock, 80 feet above the water. This passage has $6\frac{1}{2}$ fathoms' water, and will be found the more eligible of the two during the NE. monsoon, as vessels will be farther to windward, and have better anchorage under Luhwang than they would at Buffalo's Nose. A sunken rock lies S. 56° E., (nearly in line with the Mouse) from the Tinker, distant 2 cables.

Buffalo's Nose. Buffalo's Nose (牛鼻山 New-pe shan) is $1\frac{1}{2}$ mile from north to south, and three quarters from east to west. Its eastern shore is rocky, and off the western extreme lies a small islet. The western shore has several deep indentations, one of which nearly separates the island into two parts. The harbor is formed between this island and the Ploughman, and is secure; during the northeasterly monsoon, however, the wind blows directly through, and occasional violent squalls are experienced.

Fresh provisions and water may be obtained here, but the supply of the latter is not always certain. On the main (two miles distant) are several villages, the inhabitants of which showed themselves hostile, and endeavored to intimidate us from landing. There are three peaks on the island, the central of which is the highest, being about 500 feet above the sea. Near the northern extreme, the island is perforated, whence its native name is supposed to be derived.

Ploughman. The largest island of the Ploughman, which is situated in latitude 29° 37' N., longitude 122° 0' 15" E., lies W.N.W., nearly a mile from Buffalo's Nose, the depth of water varying from 5 to 18 fathoms. It is an even flat-topped island, with a reef extending from its northeastern extreme; another reef lies N. 34° W., 4 cables from its NE. extreme. The other two islands are narrow and small, and lie to the NW. of the large one. The junks usually pass inside the Ploughman and Buffalo's Nose, and to the westward of the Corkers. The passage cannot be recommended for square rigged vessels, as there are many reefs and the tides are very strong.

Mesan & Lanjett Is. Lowang. Tree-a-top I. Duffield's Passage and Reef.

Mesan and Lanjett. The islands of Mesan and Lanjett lie three quarters of a mile northeast of the Tinker. There are four large, and several smaller islets or rocks. The largest is not a mile in extent, and about 400 feet high. Its barren summit forms one of the most remarkable features in the Buffalo's Nose passage. In the channel between it and the Tinker, there are 7 and 8 fathoms; sunken rocks extend a short distance from both shores.

Harbor. Between this group and Front Island, which lies 3 miles to the NE., is the entrance to a convenient harbor (in the northeast monsoon). A small castellated rock lies near the centre, and the depth of the water varies from 5 to 9 fathoms.

Lowang. The southern face of Lowang or Luhwang has two deep indentations, with sandy bays, and a reef extends from the point opposite to Mesan and Lanjett, 3 cables. The reefs also extend from the northern extreme of the Mesan and Lanjett group 5 cables, narrowing the passage to less than a mile. From the small castellated rock abovementioned, a N. 64° W. course will carry you to Tree-a-top, (a small island without a tree on it, at the entrance of Gough's and Duffield's Passage,) and keep a mid-channel course between the reefs. The coast line of Lowang immediately after the reef point, trends to the northward, forming a deep bay which extends to the entrance of Duffield's Passage.

South, 1 mile from the first island in the bay, is a mud bank with $3\frac{1}{2}$ fathoms; to clear which, you can keep the island on board, avoiding a rock half a cable from its extreme.

From this island to Duffield's Reef, (which lies off the western entrance to Duffield's Passage, and consists of three rocks, with a sunken rock between them and Lowang,) there are 5 to 9 fathoms, and good holding-ground.

Buffalo's Nose through Duffield's Passage. From the anchorage at Buffalo's Nose, Tree-a-top Island bears N. 4° W., $5\frac{3}{4}$ miles: it is about 4 cables in circumference, and 180 feet high. There is a pile of stones on the summit, but no tree.

Duffield's, or the passage between the islands of Lowang and Futoo-shan, is the nearest towards Ketow Point.

When between Duffield's Reef and Tree-a-top, the water suddenly deepens from $5\frac{1}{2}$ to 40 fathoms. The course through is N.N.E., 3.7 miles. It is 1.2 mile broad at the entrance, and 5 cables at the narrowest part, which is near the centre. On the Futoo-shan shore are several small islets, and off the fourth point on the Lowang side is a reef one cable from the shore. The Lowang shore otherwise is very steep, having 35 fathoms to within a cable of the mud. On the Futoo-shan side, among the islets, the water shoals to $4\frac{1}{2}$ and 5 fathoms, where a ship may stop a tide if necessary.

Between the Notches (two small islands in the centre of the passage) and Futoo-shan, is a half-tide rock; unless it shows, vessels should not tack within the Notches so as to fetch to the westward of them.

Bird Rock. *Gough's & Robert's Passages.* *Ketow Pt.* *Junk passage.*

The Bird Rock lies off the north end of the passage, and has a stone pillar on it. It is one cable from the shore. The distance from hence to Round-about island (off Ketow Point) is 9 miles, N. 25° E.

Gough's Passage. This passage (by far the best of any leading to Chusan) is formed by Futoo-shan on the east, and the Central Islands (four in number) on the west. In the passage, both shores are steep to; but south of the southern islet of the central group is a shoal, of which the lead will give warning. The passage is 1.4 mile through, and 5 cables wide.

Robert's Passage. 'Robert's best Passage' is formed by the Central Islands on the east, and the mud extending from Mei-shan on the west, which dries one mile from the solid ground. The boundary of the passage westerly, therefore, is not known, except at low water, the lead giving no warning. The depth of water varies from 6 to 40 fathoms. The channel is 1.8 mile through, and 5 cables wide.

Ketow or Kitto 岐頭, (on some Chinese maps written 旗頭). The course, after you are through these two passages, for Ketow Point, will be N. 41° E., 9½ miles. Anchorage will be found anywhere along the Ketow shore, until one mile to the northward of Singlo-shan, a small islet near the Ketow shore, where the water deepens suddenly; and as there is no anchorage beyond this, until you get to Elephant Island, ships are advised not to proceed, unless they have sufficient wind or tide to carry them in.

Tides. In these passages, the first of the flood comes from the northward, and runs sometimes for three hours before it takes the same direction as the ocean tide.

Ten-foot Junk Passage. Between Mei-shan and the Ketow shore there is a narrow passage 2½ cables wide. It has deep water, 5, 6, and 7 fathoms through, until you arrive at its southern extremity, where it shoals considerably. There may be more than 10 feet, as only one line of soundings was run across the bar. There is however no likelihood of its ever being used. Near the centre of the passage, on the Ketow side, there is a custom-house, and two canals which communicate with large villages in the neighborhood.

Kwoh-keu so 霧渠所 Two miles from the northern entrance is the walled town of Kwoh-keu, a small military station; interruption to our sounding operations in 1840 was experienced from this quarter.

The several islands which form these passages may be here briefly described.

Lowang or Luhwang 六橫 is 9½ miles long, and 6 miles across at the broadest part, which is the western extreme. Near the centre it is little more than two miles across, and very little elevated above the level of the sea. The southeast body of the island rises to the height of 865 feet, being a conical bare hill. On the isthmus is an

Lowang I. Futoo-shan. Central Is. Mei-shan. Beak Head I.

isolated peak. On the northwestern side of the island are five high peaks, the highest being 920 feet above mean tide level. The south-western coast has been already described; that to the west, in the Duffield's Passage, has several small bays, with stone embankments stretching from point to point, by which means a considerable quantity of land has been gained from the sea. The points of these bays form nearly a straight line. Beyond the Bird Rock, the coast-line takes a sudden turn to the northeast. Cape Lowang, the northern extreme of the island, is high and bold. The island is 26 miles in circumference, very populous and well cultivated.

Fuh-too-shan 佛肚山. Fuh-too-shan is not quite three miles long and one broad; the southern extreme forms a narrow point, connected, at low water, with St. Andrew's. The channel between the point and Tree-a-top is $3\frac{1}{2}$ cables wide, and has deep water. A spit runs off the northern extreme of Futoo-shan, to the northward of which are three small islands.

Central Islands. The south-westernmost of the Central Islands is a small islet, connected by a reef and spit with the next, which is the largest of the group. This island is one quarter of a mile long, and is the resort of several fishermen, whose stakes and nets in 7 fathoms' water will be seen in the neighborhood.

Mei-shan 梅山 (or Plum Island) appears formerly to have been eight islands, now, however, united by substantial stone walls, one of which is $1\frac{1}{2}$ mile in extent. The mud dries $1\frac{1}{2}$ mile from its southern extreme, and $2\frac{1}{2}$ cables from the northern. Off the north-west side are two small islands, from the northernmost of which a shoal extends northerly, there being 3 fathoms at the distance of 4 cables from the shore. By keeping the Central Islands open of the two islands mentioned above, until you have past them half a mile, the shoal will be avoided, and the Ketow shore may be approached with safety.

Teaouchow mun 條筭門 The passage next to Buffalo's Nose is called Teaou-chow mun by the Chinese. The entrance to it is N. 8° E., 18 miles from the northeast extreme of the Kewshan islands.

The island called Beak Head (or 銅鑼山 Tunglo-shan) forms its southwest extreme, off the east end of which lie three small islets; and two hummocks near the end of the island render it sufficiently remarkable. Between the Beak Head and Front Islands are three islets and a rock, which, with Lowang, form Harbor Rouse.

There is a narrow passage, having $3\frac{1}{2}$ fathoms, between Lowang and the Beak Head, but there would be no object in using it, while there are other passages so superior.

Beak Head is 5 miles long, and very narrow $1\frac{1}{4}$ mile from the east extreme. Two reefs lie close in shore upon its northeastern side. The distance across to Vernon Island, or Heäke, is 2.8 miles, with 18 and 20 fathoms. Near the west extreme of Beak Head the chan-

<i>Southeast passage.</i>	<i>Vernon I., or Heäke shan.</i>	<i>Taou-hwa shan.</i>
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nel narrows to 5 cables, and there is no bottom with 34 fathoms. A reef of rocks, the northernmost of which is always above water, bounds the channel on the south side; and an island, with a conical hill and two small islets on its south side, bounds it on the northern; this island is situated midway between Vernon and Beak Head; between it and the former are two small islets and a reef, which render the channel on that side more intricate.

Having steered N. 59° W., 8½ miles from the entrance, you will pass another island, to the northwest of which good anchorage will be found in 9 to 10 fathoms. The same course, and 4 miles farther, will carry you clear of the passage. On the north side of the channel are four small islets, and between them and Taou-hwa shan is an archipelago of reefs and islands. There is a passage through into the Heäke mun, but it is awkward for sailing vessels. On the Lowang side is a reef, and an islet with a small pinnacle on it. The reef bears S. 34° E. from Cape Lowang, and is generally uncovered. The mud dries 7 cables off Lowang in the bight. Vessels beating through, therefore, should not stand into this shore, so as to bring Cape Lowang to the northward of the bearing given above to avoid the reef. On this side of Lowang, it will be found difficult to land; except at high water.

The Southeast Passage, or Heäke mun 蝦岐門, lies five miles further to the northward. It is formed by Vernon Island on the south, and Taou-hwa shan on the north. The east extreme of the former island is rugged, with large granite boulders. There is a cove at this end of the island, which runs in three fourths of a mile, and would afford good shelter for boats.

Vernon Island (Heäke shan 蝦岐山 or Crab-cape Island) is five miles long. On the northwest side of the island, there is a long bay, where vessels may anchor in 4 to 5 fathoms, and procure water from the island of Taou-hwa shan opposite. There are several cascades, and the water might be obtained without removing the casks from the boats. The passage here is 1½ mile wide. Six miles from the entrance it narrows to 3½ cables. Two small islands and some rocks on the Taouhwa shan side, and an island with a sharp peak (half a cable off the northern extreme of which is a rock), form the boundaries.

Taou-hwa shan 桃花山 shore is bold and precipitous. The peak rises to the height of 1680 feet. Near the western end the island becomes very low, rising however again towards the extreme, where it is surmounted by a peculiar crag, which will be recognized nearly throughout all the southeastern part of the Archipelago.

The depth of water in the channel is 60 fathoms in some parts, and the tide is very strong. It will, however, be found a convenient passage out to sea from Chusan during the northeast monsoon: the distance from Elephant Island to the open sea, by this passage, being only 17 miles. It should not however be attempted in light winds,

Sarah Galley Passage. Oswamong I. Two rocky patches. Channel northward.

as vessels are liable to be becalmed, and to experience flaws under the high land of Taou-hwa shan. The passage is 8 miles through, and from its northeast entrance to Round-about Island, the distance is 5 miles, N. 41° W.

Sarah Galley Passage. This passage is by no means so eligible as those already mentioned. The entrance is situated N. 12° E., 21 miles from the Kewshan group, near which will be seen the Jansen Rock, a steep cliff islet, with a reef $1\frac{1}{2}$ cable from the east extreme. Another rock, uncovered at half tide, bears from the Jansen S. 25° W., 1.3 mile. From it the highest part of Oswamong island bears N. 75° W., 1.8 mile, and the highest part of Taouhwa shan S. 5° E. The coast line of Oswamong is high cliffs, and off the southeastern extreme is a ledge of rocks.

Oswamong is called by the Chinese 烏沙 Woo-sha, or Úsha, that is, 'Black sand.'

Two patches of rock. South of the island of Oswamong, 5 cables, are two patches of rock, lying NW. $\frac{1}{2}$ W., and SE. $\frac{1}{2}$ E. from each other, and not quite 2 cables apart. From the southeastern patch, the Jansen bears N. 52° E.; and a flat peaked island between them and Taouhwa shan, S. 16° E. Very high tides may cover them, but they are generally above water. The distance between them, and some rocks extending from the north extreme of the flat peaked island, is 7 cables. There is no bottom with 31 fathoms in the vicinity of the rocks, after passing which the course is west $2\frac{1}{4}$ miles, leaving two small islets with a reef between them to the southward. The channel here is 7 cables broad, between Tangfow on the south, and an island (with a hut on its summit, and a reef of rocks off the southeast extreme,) to the northward. From hence the course is S. 50° W., 1.7 mile. The channel is now $1\frac{1}{4}$ mile broad, between a small island with two hummocks (nearly divided at the centre), and an island to the westward with a building on its summit something similar to a Druidical temple; between this island and Chookia-t sien, the mud dries nearly all the way, leaving only a small passage for boats. In standing over to the Chookia-t sien shore, vessels should not bring a small flat islet (with two rocks off its southeast extreme) to bear to the southward of S. 15° W., as the depth of water decreases very suddenly. Off the eastern end of the island with the Druidical temple on it, the small flat island abovementioned, which is at the west extreme of the Sarah Galley Passage, bears S. 21° W., 2.6 miles. Before reaching the flat island, the southeast extreme of Chusan will be seen. There is a building constructed of slabs of stone (similar to the one already mentioned on the island), on the hills over the point, and a small tower or a fort near the water's edge. From the flat island to Round-about Island the distance is 7.7 miles, W. 7° S.

Between Chookia-t sien and Oswamong, there is another navigable passage, two cables wide, which may be used with a fair wind, by

*Chookia-tsien I.**Tower-hill Passage.**Anchorage near Bell I.*

which means the reefs in the entrance of the Sarah Galley Passage will be avoided. Off the north-end of Oswamong is a small island. The passage between Tangfow and Taouhwa shan is very narrow in one part.

Chookia-tsien 朱家尖 or Choo's Peak, is 6 miles from east to west. The west coast has many deep indentations, some of which are inclosed from the sea by stone walls. On the eastern extreme are 4 remarkably high peaks; and near the centre of the island is a smooth cone-topped one, which is 1164 feet above the level of the sea, and forms one of the most remarkable features in this part of the Archipelago. On the west face of the island are several sandy bays, and the hills in this neighborhood are covered with large isolated masses of granite. Off its northeast extreme is a group, consisting of five islands; and to the eastward are three small islets, the outermost of which is $8\frac{3}{4}$ miles distant. A half-tide rock bears N. 14° E., 7 miles from the cone-topped hill. From the summit of Pooto it bears S. 78° E., and from the south-easternmost island of the northeast group, S. 49° W.

Ting-hae 定海. The harbor of Tinghae is difficult of ingress and egress, owing to the strong tides and narrow passage. The best entrance is that round Tower-hill, and between Bell and Tea Islands, in which no hidden danger has been found.

Tower-hill Passage. The course for vessels intending to enter by this passage, will be W. by N., 8 miles from Ketow Point. The depth of water in this part of the passage varies from 35 to 110 fathoms, and no anchoring ground is to be found unless close to the shore. Vessels, therefore, not having sufficient tide to carry them round Tower-hill, or wind enough to stem the current, should remain at anchor to the eastward of Round-about Island, or in the neighborhood of Singlo-shan. If possible the time of starting should be so arranged as to obtain the first of the ebb after rounding Tower-hill. After having rounded Tower-hill, Tea Island may be steered for. The depth of water between Tower-hill and Bell Island varies from 30 to 40 fathoms. On the northwest side of Tower-hill, a bank extends a cable's length from the shore, with 3 to 4 fathoms on it. Spring tides set at the rate of 3 to $3\frac{1}{2}$ knots; and vessels, in light winds, should be careful that they are not set into the archipelago between Tea and Elephant Islands, where the channels are narrow, and the water deep with foul ground.

Anchorage between Bell and Tea Islands. Between Bell and Tea Islands good anchorage will be found in 10 to 12 fathoms. Ships intending to remain here should not open the channel between Bell Island and Chusan, as the tides are stronger and the ground loose. Proceeding from thence to the inner harbor of Tinghae, another anchorage will be found on the Chusan shore. A sunken rock, with $2\frac{1}{2}$ fathoms upon it at low water, lies due south of a small hillock in the valley, and $2\frac{1}{2}$ cables from the shore.

<i>Middle Ground.</i>	<i>South Passage.</i>	<i>Elephant I.</i>	<i>North Rock.</i>
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Anchorage on Chusan shore. Opposite to a canal entrance is a mud bank, with 3 fathoms in the shoalest part, and deep water between it and the shore. The tides are irregular at this anchorage, but it is convenient for watering. In light winds, vessels should avoid the strength of the ebb, when passing through the channel between Tea and Guard-house Island, which otherwise is liable to set them through the Straight, or Southern, Passage. A ledge of rocks extends off the northeast extreme of Tea Island, 1 cable. It is steep to, and between the islands 40 fathoms will be found.

Middle Ground. After passing Guard-house Island, it is necessary to steer for Macclesfield Island, in order to avoid the Middle Ground, which has two feet in its shoalest part. The 3 fathoms' line extends within $2\frac{3}{4}$ cables of the latter island, and Tower-hill on with the slope upon the south rise of Tea Island will keep you in 4 fathoms, or not to open the fort on Trumball Island with the north end of Macclesfield.

The Middle Ground is situated at the western extreme of the harbor. On all but the western edge, the water shoals suddenly. The passage between it and Chusan is $1\frac{1}{2}$ cable wide, with 12 to 14 fathoms. The channel is 1 cable broad between Guard-house Island and it.

South Passage. The South, or Straight, Passage lies between Deer and Elephant Islands. Two sunken rocks lie near the centre of the channel, which narrow it to $1\frac{3}{4}$ cable. It should never be attempted without a commanding breeze. The tides in the vicinity of the sunken rocks flow from three channels, forming eddies which render a ship, in light winds, totally unmanageable. Intending to enter this passage, the course from Round-about Island is NW. by N., $4\frac{1}{2}$ miles.

Elephant Island is remarkable for a curious crag near the summit, and cannot be mistaken. The tides or wind not suiting to go into the harbor, anchorage will be found abreast of it in 16 to 18 fathoms' water; the bottom is gravel, and not good holding-ground. Beyond Round Island, which is a small islet lying to the northeast of Elephant Island, the water deepens from 28 to 34 fathoms, until you arrive at the Southern Rock, which has $1\frac{3}{4}$ fathom on it at low water. The marks for it are the Cap Rock on with the saddle of Kintang, N. 75° W., and the joss-house on the hill near the suburbs showing between Trumball and Sarah Galley Islands; it lies S. 63° E., 2 cables from the Black Rock, and N. 75° E., $1\frac{3}{4}$ cable from the ledge extending off the island to the southward of Tea Island.

The North Rock lies $1\frac{3}{4}$ cable due north of it. The marks for which are a bushy tree on the eastern slope of Sarah Galley Island in line with the square beacon on the east hill; and the Black Rock's north extreme on with the south part of the Cap; it bears from the former N. 63° E., $2\frac{1}{4}$ cables; it has 9 feet at low water. This patch is about 30 feet by 20; the water deepens suddenly on all sides of it.

Inner Harbor. Passages between Deer I. and Sarah Galley and Trumball Is.

To avoid these dangers, the best direction is to keep the western shore on board, taking care to avoid the ledge of rocks which extends three quarters of a cable from the island south of the Cap and Black Rock; the latter is steep to. At this part of the channel the bottom is rocky, and the depth very irregular. Having passed Sarah Galley Island, steer for Macclesfield, which may be rounded close, to avoid the Middle Ground, the marks for which have been already given in the directions for Tower-hill Passage.

Inner Harbor. The Inner Harbor of Tinghae is formed by the coast of Chusan on the north, Trumball and Macclesfield islands on the south, Grave Island and the Beacon Rock on the east, Guard-house and Tea islands to the west. It is $3\frac{1}{2}$ cables wide and 6 cables long, the depth of water varies from 4 to 8 fathoms; at the eastern extreme is a patch of rocks, with two fathoms, lying S. 85° W.; one cable from the Beacon Rock, which may be avoided by keeping the Chusan shore on board until Sarah Galley is open of Trumball.

Deer Island Passage. The Inner Harbor also may be entered from the eastward by passing between Deer and Sarah Galley islands, which are $1\frac{1}{2}$ cable apart. The Beacon Rock, to the northeast of Sarah Galley, may be passed close on either side. The Chusan shore may then be steered for, keeping 1 cable to the eastward of Grave Island, and when the harbor Beacon Rock opens with Grave Island, it may be steered for; pass between it and Chusan, and keep the Chusan shore on board until Sarah Galley Island is shut in with Trumball. This passage is superior to the South or Straight Passage, for although it is only $1\frac{1}{2}$ cable wide in some parts, the limits are always marked, except off the northeast end of Deer Island, from whence a spit extends 1 cable northerly. It is also the only passage into the harbor, in which the flood tide is in your favor all the way.

Anchorage between Trumball and Sarah Galley. There is good anchoring ground between Sarah Galley and Trumball Islands, in 8 to 10 fathoms. A spit extends from the southeast extreme of the latter, the 3 fathoms' line being 3 cables from the shore. By keeping the south end of Macclesfield open of the summit of Tea Island, it will be avoided.

Suburbs. The suburbs, called Taou-tow 衙頭, contain many houses, forming a long street running parallel to the beach. To the east, and close to the water's edge, is a small hill, with a temple or joss-house on it (the mark for the South Rock), 122 feet high.

The level ground intersected by canals extends $1\frac{1}{4}$ mile to the eastward, where it is terminated by a ridge of hills 642 feet high extending down to the beach, upon which are 3 beacons, two round and one square; the latter is 595 feet high, and also one of the marks for the North Rock. Westerly from the suburbs, the level ground extends 1.1 mile, a ridge of hills 450 feet high runs down to the coast, forming two points. There are also three beacons on this ridge, the central one is 323.7 feet above mean tide level.

Tides. Variation of Compass. Suburbs and City of Ting-hae. Chusan I.

The latitude of the eastern of these points (the one opposite Guard-house Island) was ascertained to be $30^{\circ} 0'.20''$ N., and the longitude $122^{\circ} 5'.18''$ E.

The variation of the compass in 1840, was $2^{\circ} 33'$ E., and high water, on fall and change days, 1 hour before the moon's transit.

Rise and fall of the tide, 12 feet and 6 inches. Scarcely any change takes place in the depth of the water three quarters of an hour previous and subsequent to high water. At low water, the change in the depth occurred more rapidly. Ordinary tides rise and fall from 5 to 7 feet.

In all the channels, generally speaking, the change in the direction of the stream does not alter until 1 *h.* 40 *m.* after the change has taken place in the depth. In the Inner Harbor, and along the coast of Chusan, the flood comes from the eastward; at the outer anchorage off the Elephant, from the southeast; between Bell and Tea Islands, ships flood-rode tend to the northward. The strength of the tide varies from 2 to $3\frac{3}{4}$ knots. Strong breezes from the northward materially affect the rise and fall, the range in two consecutive days being sometimes $2\frac{1}{2}$ feet.

Chusan. The island Chusan (or Chow-shan 舟山 so called from its supposed resemblance to a *boat*) is 51.5 miles in circumference, its extreme length being 20.8 miles, which is in a northwest and southeast direction. The greatest breadth in any part is 10.5 miles. From the beach at Tinghae to the northern shore, the distance is 7 miles. Towards the eastern end of the island it becomes narrower, never however being under 6.1 miles.

The city of Tinghae is a walled town, 1.8 mile in circumference, situated 5 cables from the beach. There are four entrances, situated at each of the cardinal points, which are ~~through~~ double arched gateways at right angles to one another. The span of the outer one is 7 feet and 6 inches, and 9 feet high. The city wall is 14 feet and 9 inches high, surmounted by a parapet 4 feet and 6 inches. The width of the wall is 13 feet, and the parapet 2 feet. The southern face runs east and west; the western face north and south. the eastern face north 350 yards, and then northwest; the northern face is irregular. On the northwest side the city is overlooked by a hill, part of which is inclosed by the wall. A moat 33 feet wide and 3 feet deep, nearly encircles the city, and enters it near the south gate. A canal and paved footpath communicate with the suburbs, but the principal means of communication with the sea is by a canal further to the east.

There are three other commercial ports in the island, *viz.*, Shinkia-mun (Singkamong), Chinkiang (Singkong), and Shaou.

Shinkia-mun 沈家門 or Singkamong. This is situated at the southeast extreme of the island. The town is situated at the water's edge, and is a miserable assemblage of huts. The principal occupation of the inhabitants is fishing. About 35 junks, of 100

Sinkamong Harbor. Lookia I. Channel to Tinghae. Aou-shan channel.

tons burden, and carrying from 30 to 35 men, with 250 smaller boats, each containing 5 men, are employed for this purpose. The harbor is formed by the island of Loo-kia (which is divided into six islands at high water), and is $1\frac{1}{2}$ cable wide, with 4 to 5 fathoms abreast the town. The southwest entrance lies between Loo-kia and Takan, and has not more than $2\frac{1}{4}$ fathoms at low water. A reef and mud spit extend easterly from Takan one cable, and the mud extends westerly from Loo-kia $4\frac{1}{2}$ cables.

H. M. ship "Pylades" lay between Ta-kan (大竿) and Chusan in 5 fathoms, the width here being $2\frac{1}{4}$ cables. The high land (600 feet) on the Chusan shore occasioned the squalls to be sometimes very violent. H. M. ship "Conway" lay to the westward of Lookia, with the small flat island (with two rocks off it), at the entrance to the Sarah Galley Passage, bearing west 0.7 mile in 5 fathoms. The distance from Shinkia-mun to Tinghae is $11\frac{1}{2}$ miles. The channel along the Chusan shore has deep water. It is not, however, advisable for ships, owing to a number of small islands 3 miles to the east of the suburbs, which render the passage narrow and crooked.

Sheih-luh mun 十六門, or Sixteen Passages, is the name given to this narrow and crooked passage by the Chinese.

Several islands, with extensive mud banks, confine the channel beyond this to half a cable; occasionally it is one cable wide. Vessels, therefore, bound from Tinghae to Shinkia-mun must use one of the passages already described, or must pass to the northward of Deer Island and the island east of it; this passage is not above $1\frac{1}{2}$ cable wide. It has deep water, except at the southeast entrance, where there are only 3 fathoms.

Between Takan and Aou-shan there is shoal water, to avoid which vessels should not stand so far to the northward as to bring the reef off the southern end of Aou-shan in line with the crag on Elephant Island. The channel between the east end of Chusan and Pooto has only $1\frac{1}{2}$ fathom at low water, and off the southeast end of Chusan it is only 2 cables wide, owing to a reef with a stone pillar on it, near the centre of the passage.

After rounding the flat island with two rocks, this Beacon will be seen bearing N. 35° E. A course should be steered to pass between it and Chusan. Shoal water extends $3\frac{1}{2}$ cables from Lookia, and 6 cables from the island with the Druid's temple on the summit. To avoid which, do not stand further to the eastward, when a cliff islet off the east extreme of Chusan is in line with a building on the summit of the flat peninsula at the northeast extreme of Chusan. The Beacon Rock in line with the cliff islet is a good mid-channel mark. After passing between the Beacon Rock and Chusan, keep the cliff islet on with the building upon the peninsula, which will keep you in the deepest water. The flat is extensive, the $2\frac{1}{2}$ fathoms line extending 1.7 miles. On it were several hard casts of the lead. Vessels therefore, should cross the flat under easy sail.

*Pooto I.**Passage to Green I.**Singkong Harbor and Islands.*

Pooto 普陀. The island of Pooto is 3.4 miles from the south-east point of Chusan, and 1.6 mile from the east point. The channel is termed by the Chinese Lienhwa yang, 蓮花洋 or Sea of Water-lilies. After passing the flat noticed above, the water deepens suddenly to 6, and then to 12 fathoms. There is also good passage between Pooto and Tsing shan 青山 or Green Island, which is 7 cables wide. The flat extends within 5 cables of Pooto, which must therefore be kept on board. The island is $3\frac{1}{2}$ miles long, but in one part it is only six tenths of a mile broad. A narrow projecting point extends from the west side, forming a deep sandy bay, with three fathoms in it. A stream runs into the bay, which might be used during the northeasterly monsoon, by vessels in want of water. There are two reefs in the bay, but they are always above water. This island and the Chookia-tsien Group belong to the priests of Budha. The temples on Pooto are very numerous, the largest of which is situated on the western side of the island, and a broad flagged road leads to it from the south side.

Singkong 岑港 or Chinkiang. Chinkiang harbor is situated at the western extreme of Chusan, and is distant $7\frac{1}{2}$ miles from Tinghae. From the Inner Harbor, to the southwestern point of the island, the distance is 4 miles. The passage between Bell Island and Chusan is not recommended, owing to the strong tides which exist in it. Near the centre is a half-tide rock, with a beacon on it; and two cables to the southwest of it, a rocky patch with only $1\frac{1}{4}$ fathom on it. Vessels bound to Chinkiang had, therefore, better use the passage between Bell Island and Tower-hill. Should, however, the other be used, that part of the channel between the Beacon and the Chusan shore will be found the best.

Between Kiddisol and Chusan there is no danger, the distance being rather less than a cable and a half.

From the southwest point of Chusan, the coast-line is mud (with the exception of a small islet) to the point of Chinkiang harbor. Anchorage will be found along this shore in from 10 to 12 fathoms. A small islet (the Steward) lies midway between Chusan and Kintang. There are 45 fathoms' water in its vicinity; 2 cables to the eastward there is a rocky patch, on which 9 fathoms were found.

Chinkiang harbor is formed by three islands (Wae-tiaou 釣外, Chung-tiaou 中釣, and Le-tiaou 裡釣 i. e. Outer-hook, Middle-hook, and Inner-hook,) and Chusan; a reef of rocks lies off the southwest point of the first island, and the mud extends from the island nearly to the reef. Between Wae-tiaou and Chusan the distance is 6 cables, with 7 to 8 fathoms. The mud extends half a cable from the island; on the Chusan shore is a circular fort, which can only be approached along the embankments.

Opposite the island of Chung-tiaou, the channel is less than a cable wide, with 7 fathoms. The passage increases but little in

<i>Kutsu I.</i>	<i>Blackwall I.</i>	<i>Kintang I.</i>	<i>The Steward.</i>	<i>Broken I.</i>
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width, until you have passed the island of Le-tiaou, opposite to which is the landing-place, and the entrance of a stream, which is navigable at high water up to the town, distant 6 cables. Near the beach are a few houses.

Upon the islands forming the harbor, and also on the point near the entrance, are extensive quarries of stone. The passage through is 1.7 mile long, and being both narrow and crooked can only be available for steamers and small vessels.

Kutsu 孤茨 or Koo-tsze. To the northward of Le-tiaou, is a flat island, Koo-tsze. A reef of rocks extends from it towards the island of Chusan, narrowing the passage to one cable, in which there is no bottom with 30 fathoms.

Channel between Blackwall and Chusan. Between Koo-tsze and Blackwall or Tsatsu (册子 Tsih-tsze), the distance is three cables. The eastern side of Blackwall has several deep bays and indentations; a sunken rock lies off the northeast point, distant $1\frac{1}{2}$ cable, and between it and Chusan, the water varies from 12 to 19 fathoms.

Kintang 金塘. From the Steward (or Pwanyang' tsiaou, half-way rock) to Kintang, the distance is two miles; near the southeast extreme of the latter is a remarkable saddle hill, which with the Cap Rock forms one of the marks for the southern sunken rock, in the South, or Straight, Passage. There is a peninsula (connected by mud, which is overflowed at high water) at the southeast point, from which a ledge of rocks extends, the southwestern part of which is always above water. Nearly opposite Chinkiang, there is another sharp peak on Kintang, which is 1519 feet above the level of the sea.

Channel between Kintang and Blackwall. Vessels bound from Chinkiang to Siaou Sha-aou, or to sea by the northwest passage, must bear in mind that there is no anchorage after leaving Chinkiang until to the northward of Blackwall, the distance being 6 miles. The channel between Kintang and Blackwall is half a mile wide. A small islet lies off the southeast extreme of the latter. Between the two there is deep water, and from the summit of the islet, Chinghae (at the entrance of the river leading to Ningpo) may be seen over Kintang, which, abreast of this part of the channel, is very low. After passing the islet, there is a long bay on Blackwall Island, from the northern point of which a reef extends $1\frac{1}{2}$ cable. Off the north extreme of Kintang there is a group of 5 islands.

Broken Island or Mamuh shan 馬目山. The northern rock off Broken Island bears from the northwest extreme of Blackwall N. 15° E., $6\frac{1}{2}$ miles. Between it and Broken Island there is a good channel. The latter is connected with Chusan at low water; it is about 700 feet high. The ridge of hills at the northwest extreme of Chusan rises to the height of 761 feet, and on it are three beacons. The entrance to the harbor of Siaou Sha-aou is between Broken and Fisher's Island (Changpih shan 長白山), and is 6 cables wide.

Harbor.	Fisher's I.	Passages between Sheppey, Chusan, & Blackheath.
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Broken Island is steep to, except on the southeast side, where it joins Chusan. A shoal extends 5 cables off the west side of Fisher's I. The harbor is formed by Fisher's Island and Chusan; it is two miles long and 1.7 mile broad, with a depth of water from 5 to 9 fathoms. This harbor is well sheltered from all winds, and easy of ingress and egress. The coast of Chusan is lined with a mud bank, which renders landing (only at one spot, which is at the eastern extreme of the harbor) difficult except at high water. Near the landing-place is a small village; the principal town is situated some distance up the valley from the landing-place. The south shore of Fisher's Island is also an extensive mud bank, a considerable portion of which has been inclosed from the sea. Off the southeast extreme of the island, the three fathoms' line extends five cables. The depth decreases gradually, so that the lead will give warning. The eastern entrance to Siaou Sha-aou harbor is 8 cables wide. A small islet and a rock lie off the north extreme. They may be rounded close, passing between the islets mentioned above and the islets to the eastward.

Passage between Sheppey and Chusan. Vessels intending to go to the eastward from Seaou Sha-aou may pass either between Sheppey (Lan shan and Sew shan), and Chusan, or to the northward of Sheppey; the latter is the more eligible. The former is 2 cables wide in the narrowest part. The Houbland Islands lie between Sheppey and Fisher's Island. Vessels should pass between them and two small islets, which lie off the southwest side, between which and Chusan is the narrowest part of the passage. Having passed this islet, vessels may either stand along Sheppey, or steer a course for the open sea.

Passage between Sheppey and Blackheath. To pass to the northward of Sheppey, a N. 56° E. course must be steered for a long barren island, with a round peak upon it, the distance between which and Sheppey is 1.6 mile. The mud runs off the latter half a mile. The barren island is steep to, on the southeast shore. In the channel, between Kwan shan and Sheppey, are several islets; and in standing over to the Sheppey side of the channel, the mud may be avoided by keeping the north end of the largest of these islands open of the northern extreme of Sheppey.

Having passed the barren island, a course must be steered to pass close to Kwan shan, which lies west from the barren island $1\frac{1}{4}$ mile, in order to avoid a reef which is covered at high water. It is distant from Kwan shan $2\frac{1}{4}$ cables. From it the barren hill bears N. 85° W., and the highest part of Sheppey S. 26° W.

Having passed the reef, the large island, mentioned as the mark for avoiding the mud bank extending easterly from Sheppey, bounds the passage to the southward. A reef extends a short distance from its northern extreme.

Nine Islands. Besides Kwan shan, there are Nine Islands lying off the southeast end of Tae shan. A reef of rocks lies off the southern

<i>Nine Is.</i>	<i>Sheppey I.</i>	<i>Its Anchorages.</i>	<i>Tae shan.</i>	<i>Kwan shan.</i>
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point of the one east of Kwan shan. The channel then runs between these Nine Islands to the north, and the large Passage Island on the south. A due west course will carry you along Changtoo and the northwest group to the open sea.

Vessels wishing to anchor under Sheppey, which will be found a secure anchorage in the northeasterly monsoon, may haul to the southward, after passing the first island to the eastward of the large Passage Island, and run between them and a cluster of rocks to the eastward. The east extreme of Sheppey is a low cliff, which may be passed within a cable; good anchorage will then be found in five fathoms, the water shoaling gradually towards the shore.

Sheppey. The island of Sheppey is 7.5 miles long, and 5.6 board. On the east side are several deep sandy bays. A considerable portion of the east extreme is separated from the island by a narrow channel at high water. The island appears formerly to have been two (Lan shan 蘭山 and Sew shan 秀山), the land being very low, and the coast-line protected from the sea by walls near the northern extreme.

H. M. S. "Pylades" anchored here in the month of February, in $5\frac{1}{2}$ fathoms, six tenths of a mile from the west point of Sheppey, being N. 8° W.; the island south of Sheppey bearing S. 54° W.; and the highest peak of Chusan, S. 7° E. To the eastward of Sheppey are two cliff islets, the nearest is 1.8 mile distant, and the further $4\frac{1}{2}$ miles. South from the western, 2 cables, is a ledge of rocks which is occasionally covered; and 0.6 of mile W.N.W. from the eastern, is another small islet. The mud bank from Sheppey gradually deepens to the eastward, the depth of water, when the island of Pooto bears due south, being $8\frac{1}{2}$ fathoms.

Tae shan 岱山. To the northeast of Fisher's Island, $5\frac{1}{2}$ miles, is the island of Tae shan, which is very populous. The centre of the island is an extensive flat, with many villages; near to its eastern extreme, the hills also separate, leaving a level plain across the island. Midway between Fisher's Island and it are two small islets; and between Barren Island and it are three others, off the south end of the westernmost of which is a sunken rock. Rocks also extend off the southwest and north points of the central one of the three. A mud bank extends from the northwest points of Barren Island nearly to the first islet of the three, which lie to the NW. of it. Between them and Tae shan the bottom is sandy with irregular soundings.

Kwan shan 官山. The passage between Kwan shan and Tae shan is 3 cables wide; on the Tae shan shore are several small islets; the channel is deep. H. M. ship "Pylades" anchored in a small cove to the north of Kwan shan on the island of Tae shan, and rode out a heavy gale of wind. The cove, however, is too small to be recommended, and the deep water in its vicinity is also disadvantageous.

*Changtoo or Blackheath I.**Eastern group.**Islands north of Pooto.*

To the westward of Tae shan, the islands extend about 15 miles, and from its summit, the termination of the group northerly could not be defined.

Changtoo 長塗. To the eastward of Tae shan, and separated by a channel 1.5 mile, is another large island, called Changtoo by the Chinese, and is probably the Blackheath of Thornton's chart. The southern face of this island has many deep indentations, and may be composed of several islands, for the time allotted for the survey did not admit of a close investigation.

The breadth of the channel, between Changtoo and the two islands to the eastward of Sheppey, is 2.3 miles. The group of islands continues to the eastward of Changtoo, and a little to the southward of the same parallel, for 25 miles.

Eastern Group. The easternmost island of this group is in latitude $30^{\circ} 7' 45''$ N., and longitude $122^{\circ} 46\frac{1}{2}'$ E. From the anchorage under Sheppey, it bears E. 5° S., 27 miles; from the summit of Pooto, E. 20° N., 21 miles; from the outer islet east of Chookia-tsien, N. 29° E., $18\frac{1}{4}$ miles. It is five miles in circumference, and about 500 feet high. There is a small village on its northwestern side. The shores are precipitous cliffs. The intervening islands between this and Changtoo were not examined, their outline therefore has only been inserted in the chart. Two small islets lie N. 74° E. two miles from the eastern island.

Coast-line of Chusan. The coast-line of Chusan, after passing between it and Sheppey, trends to the northeast. At the distance of three miles, there is a small island with a narrow passage between it and the shore, and a deep bay to the westward, in which the mud dries out a considerable distance, rendering it difficult to land, except at the extreme points.

Three miles and a half further to the southeast, there is a larger island with a remarkable *fall* in the hills near its centre; a small islet lies half a mile west from its extreme.

To the eastward are three islands at the distance of, a $\frac{1}{2}$, $1\frac{1}{2}$, and $3\frac{1}{4}$ miles. The nearest is the largest of the three, and has a patch of rocks 2 cables from it to the northeast. Northeast also from the centre of the three is another reef, 4 cables from the island. The outer island is a narrow cliff with a rock off its northeast end.

To the northward and northeast of Pooto, are three islets and three rocks, which are steep to, except to the westward of the southern and largest of the three, where there is a reef. To the northeast of these islands, and $3\frac{1}{2}$ miles from the summit of Pooto, is a small conical islet; E. 8° S. 2 miles from it, is a group of 4 sharp pinnacled rocks, with several reefs among them. The reef already described (when treating of the island of Chookia-tsien) lies S. 42° E., $6\frac{1}{4}$ miles from these rocks, and is the last danger in the passage. The northeast extreme of Chusan is high, rising probably 1400 feet, the hills approaching near the coast-line. A flat peninsula, with two buildings made of stone slabs, forms the extremity of the island.

To go north of Chusan. Anchorage near Pooto. Two ways into Sheppey.

Ships bound to the north side of Chusan ought to make the land in about latitude 30° , when the easternmost island of the northern group will be seen to the northward, and the high land of Chookia-tsien to the westward. On closing the land, three small islets to the eastward of Chookia-tsien will be made out, and also the island of Pooto, which may be known by a small lookout-house on its summit. Intending to communicate with Chinkia-mun (Sinka-mong), the most eligible anchorage will be found to the southward of Pooto, for which purpose a course may be steered to pass between that island and Lookia, taking care to avoid a half-tide rock which lies E. 12° S., 9 miles from the highest part of Pooto. The best anchorage will be found opposite two sandy bays, near the west extreme. It is recommended not to open the passage between Chusan and Pooto, as by standing too far to the westward, vessels may get on the flat between Pooto and Chinkia-mun. Good water may be obtained from a well in the sandy bay near the temple.

If bound to Sheppey or Siaou Sha-aou, a group of sharp pinnacle rocks must be kept to the southward, when a remarkable island near Chusan, with a sudden fall in the land near the centre, will be seen to the westward. There are three islands with rocks off them to the eastward of it; when abreast the easternmost of these, one course may be steered so as to pass between Sheppey and Kwan shan, in which case a vessel should get to the northward of a small cliff island, one quarter of the way between Changtoo and Chusan, and keep mid-channel between it and Changtoo; $3\frac{1}{4}$ miles to the westward of the first cliff island, there is a second, which must also be kept to the southward, and you will then be abreast several small crooked islets, which lie off the southeast extreme of Tae shan; Kwan shan lies $2\frac{1}{2}$ miles to the W.N.W. of the second cliff island, and is high with a flat summit; keep it close on board to avoid the sunken rock near its south extreme, bearing from the highest part of Sheppey, N. 26° E.; you may then steer a west course to pass close to Barren Island, from whence a S. 56° W. course, 5 miles, will carry you to Siaou Sha-aou harbor:—or, instead of passing between the islands of Changtoo and Kwan shan, you may pass between Sheppey and Chusan, in which case keep the Chusan shore on board, passing between it and a small islet which lies S. 23° E. from the south end of Sheppey. The course then lies between an islet on the Chusan shore and the south islet off Sheppey, from thence steer so as to pass to the northward of three small islets, and a reef which lies two miles to the westward, from whence a west course will carry you past a rocky point, and into Siaou Sha-aou, 小沙澳 Small Sand-harbor.

Barren Is. Leuconna. Monte Video. Fisherman's Chain. Tchinsanna I.

Section 9.

DIRECTIONS FOR THE NORTHEAST PART OF THE CHUSAN ARCHIPELAGO.

[This survey was made by Lieuts. Milbank and Nolloth, of H. M. S. "Childers," Commander G. G. Wellesley, in 1843.]

VESSELS bound for Shanghai, and not intending to call at Chusan or Ningpo, should pass to the eastward of the Chusan Archipelago, and make the Barren Islands, which are in latitude $30^{\circ} 43' N.$, and longitude $123^{\circ} 7' E.$ From hence the Amherst Rocks, at the entrance of the Yangtze' kiang, bear N. $58^{\circ} W.$, $47\frac{1}{2}$ miles.

The Barren Rocks are three in number, about 50 feet high, lying nearly east and west, and are three quarters of a mile in extent. To the southeastward of the eastern rock, is a rock awash, distant from it 2 cables.

S. $31^{\circ} W.$, $20\frac{1}{2}$ miles from the Barren Rocks, is Leuconna, which appears from the southward as three abrupt and round-topped hummocks.

S. $24^{\circ} W.$, 19.8 miles from Leuconna, is Monte Video, or Wong-shing shan, in lat. $30^{\circ} 7' 8'' N.$, and long. $122^{\circ} 46' 2'' E.$; it has a bold and precipitous appearance, and is nearly square. It has a remarkable white cliff, which shows very distinctly when the island bears NW. by N.

N. $74^{\circ} E.$, 5 miles from its summit, are seven rocks called the Four Sisters; and N. $78^{\circ} E.$, 9 miles, are two rocks called the Brothers. There is a safe passage between these rocks and Monte Video, and also between the rocks themselves, the depth varying from 30 to 40 fathoms in the vicinity of these islands.

Westerly from Monte Video, is a chain of islands extending to Tae shan, called Fisherman's Chain. Vessels passing to the eastward of these islands, and bound to Chusan or Ningpo, should make Monte Video, then pass to the northward of Fisherman's Chain, and between it and the large island of Tchinsanna.

The Beehive Rock in this channel bears from Monte Video, N. $17^{\circ} W.$, $14\frac{1}{2}$ miles, and from Leuconna, S. $69^{\circ} W.$, $12\frac{1}{2}$ miles; it is about 35 feet high, with a rock awash 3 cables to the eastward of it, otherwise the depth of water around it is from 14 to 17 fathoms.

W: by N. from the Beehive is the large island of Tchinsanna, having several smaller islands on its eastern and northern faces. The channel between it and Tae-shan is 5 miles wide, and safe. Tchinsanna is $8\frac{1}{2}$ miles long from east to west, affording good anchorages in both monsoons.*

* Having passed Tchinsanna, vessels will proceed according to the directions given in Sect. 8, for the Chusan Archipelago (page 95), or by those for the passage between Square Island and Shanghai in Sect. 12, page 104.

Peenchowa I. Chintsien shan and Leeleu-sa Is. Saddle Is. Tungluh-hwa I.

Northward of Tchinsanna is Peenchowa. It has several islands around it, and between it and Tchinsanna; it is next to Tchinsanna in size, being 6 miles from east to west, and will also afford shelter in either monsoon. Off its northeast point, 5 cables distant, is a rock awash.

The islands of Chintsien shan and Leeleu sa lie to the eastward of Peenchowa, bearing from the Barren Islands S. 77° W., 17 miles, and from Leuconna N. 21° W., 18 miles. Between Leuconna and Chintsien shan, is the Childers Rock, which does not always show. When on it, the peak of Chintsien shan bears N. 9° W., the Barren Islands N. 70° E., and Leuconna S. 15° E.; the lead gives no warning of it, the depth being 24 fathoms close to.

The two islands of Chintsien shan and Leeleu sa afford very good shelter in both monsoons. The former, from the southward, appears of an equal height, the latter more rugged, the highest part being at its northeast end. There is fresh water at the eastern end of Chintsien shan. In the bay on the east side of Leeleu sa, is a rock which only shows at low water spring tides. It lies nearly in the centre of the bay. When on it, the highest part of the rock close to the eastern point of the bay is in line with a conical hill over the western point of Chintsien shan. Should vessels be caught at anchor under these islands with a southeasterly wind, they might run through between them, taking care to keep *as close as possible* to the shore of Leeleu sa, as there is a patch of three fathoms in the centre of the channel, and three wash rocks further to the northward.

The bay on the south side of Leeleu sa is smaller than the other, with deep water at the entrance of it; the best anchorage in it is a little to the eastward of a rocky point which juts out in the centre of the bay.

Eight miles to the northwest of Chintsien shan is Saddle Island, and midway between them is False Saddle, forming the northern boundary of the Chusan Archipelago. The two largest of the northern group are saddle-shaped, about 800 feet high, and of similar appearance when seen from the eastward. The northernmost island is in lat. $30^{\circ} 50' N.$, and long. $122^{\circ} 41' E.$

To the southwest of North Saddle are the long and narrow islands of Tungluh-hwa and Siaoluh-hwa, which are scarcely detached. These islands afford anchorage, but not so good shelter as under Tchinsanna, where vessels ought to stop should night or thick weather render doubtful the making of the Amherst Rocks, which are distant from the northernmost Saddle Island, N. 42° W., 24 miles. Having made and anchored close to the Amherst Rocks, follow the directions given for entering the Yangtsz' kiang in Sect. 13, on page 107. The tides throughout this group are regular, the flood sets northwest, and the ebb southeast.

Three Passages into the Tahiah River. The Triangles. Tiger's Tail Reef.

Section 10.

SAILING DIRECTIONS FOR THE RIVER TAHIAH.

By Captain R. Collinson, C. B., R. N.

THE R. Tahiah 大 浹 江 or entrance to the Yung kiang 涌 江 is entered by three passages, (formed by the islets called the Triangles in Thornton's old charts of 1703,) all of which are difficult.

The first danger in the southern channel is a rock which is covered at half tide, lying N. 70° E., 2½ cables from the summit of the Eastern Triangle, or Tayew shan. If the Inner Triangle, or Passage Island, is kept open of the south point of the outer one, this danger will be avoided.

Having passed the east point of the Outer Triangle, keep it and the Middle Triangle close on board, to avoid a sunken rock with 8 feet on it, which lies in mid-channel, and to the southward of the latter. When on the reef, a small island, 8 miles to the west of Chinhai, is in line with the extreme of the high bluff land beyond it. Then steer to pass half a cable east of the Inner Triangle. Then steer for the foot of the Joss-house hill at Chinhai, taking care that the tide does not set you over to the eastern shore, the water shoaling to 2 fathoms, five cables from that side.

The second passage, or that between the Middle and Inner Triangle, is perhaps the best of the three. A mud spit extends westerly from the Middle Triangle 1½ cable, which will be avoided by keeping the joss-house on the hill open of the west point of the Inner Triangle; pass as before a cable to the eastward of the latter, which must not be approached nearer than half, or receded from further than 1½ cable.

The channel between the Inner Triangle and the Joss-house point, has only 2 fathoms' water; it is however the broadest and best for vessels of light draught. The only danger in it is the Tiger's Tail reef, which lies rather more than 1 cable, N. 40° W., from the highest part of the Inner Triangle. The marks for the Tiger's Tail rocks are Hoo-wu-tsiao, or the little peaked islet at the south end of the stakes, in line with River Hill, and also the southeast foot of the Joss-house hill in line with the first cone. The Joss-house Point is steep to, and vessels will find good shelter under the fort.

The river is staked across at the entrance, under the Joss-house hill, and there are sunken junks on each side of the opening through them.

Ningpo 寧 波 is 11½ miles from Chinhai by the river, which is nearly strait, the reaches all lying to the southward of west, except one which is short. There are no dangers; the depth in mid-channel varies from 5 to 2½ fathoms. Vessels therefore drawing more than 13 feet should wait for half flood. The average width of the river is two cables.

<i>Position of Ningpo and fork of the River.</i>	<i>Square I.</i>	<i>Friendly Is.</i>
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At the city, the river separates into two branches, one taking a NW., the other a S. by W. direction.* The latter is barely a cable wide, and is crossed by a bridge of boats one quarter of a mile above the junction. A spit extends from each point at the entrance to the former, and has a depth of from $2\frac{1}{2}$ to 6 fathoms.

Section 11.

DIRECTIONS FROM CHINHAÏ TO CHAPOO.

Part of this and the next Section go over the same ground as the directions in Section 13. They were made in 1840 and 1842 by Capt. Collinson; the islands in the northern part towards Shanghae were surveyed by Mr. Johnson, master of H. M. ship "Conway," in 1840.

N. by W., $3\frac{1}{2}$ miles from Square Island, is a Middle Ground, having 2 to 3 fathoms on it. Vessels therefore should approach the Kintang shore which is steep to; if *beating* through this passage, they ought not to bring Square Island to the eastward of south.

There is a passage inside, and to the westward of this Middle Ground, which vessels of 15 feet draught may use; but it is recommended not to do so, as the mud dries off the Chinhaï shore three quarters of a mile, and the water shoals suddenly. When standing along this shore, a group of small islands, (the largest of which was called by Capt. Giffard of the "Cruizer," Friendly Island,) lies three quarters of a mile off shore, and distant from Chinhaï citadel $7\frac{3}{4}$ miles, under which junks frequently anchor for shelter. Four miles further to the northwest is a high bluff head, forming the southern extreme of Hangchau foo bay, and called Friendly Bluff. This forms a remarkable object throughout the navigation of this part of the Archipelago.

* "The fork of the river of Ningpo is called 'the Mouth of Three Rivers,' from the fact that, at this point, there is the confluence of three streams. To the northwest of the city, there is a large stream running down through the districts of Yúyáu and Tsz'kí, which is called the Yáu River, or the Shun River, or the river of Tsz'kí. To the east, there is another stream, known under the name of the Yung River, which name it retains above the city of Ningpo only the short distance of 12 miles, when it branches off in one line to the southwest, under the name of the Ying River, and in another line to the southeast towards Funghwa, borrowing its name from the same district. There, where the Ying River unites with the Funghwa River, it is occasionally spoken of as the Peh-tú kiang, or 'North Ford river.' At the eastern angle of the city of Ningpo this twin tributary unites with the river of Tsz'kí, and their joint waters flow northeast and north in a deep channel, until they enter the open sea at Chinhaï. From the fork down to Chinhaï, the river is generally called the Yung kiang. It is also not unfrequently named the Ta-tsieh river, and some parts of it are known as the Siau Tsieh. In English charts and descriptions, it is written the Tahiah, or the Takiah river; but the correct pronunciation, as has just been represented, is 'Ta-tsieh.'" *Chinese Repository*, Vol. XIII, page 14.

North I. Seven Sisters. Seshan Group. Fog Is. Chapoo Roads.

N. $\frac{3}{4}$ W., 15 miles from Square Island, is North Island, being the easternmost and largest island of the first group of islands in this direction. It is cultivated, and about 216 feet high, and three quarters of a mile in extent from east to west. Close to it the water deepens suddenly to 26 and 32 fathoms. The holding-ground is good, but it is too small to afford shelter in strong breezes.

North from it is a small rock that always shows. W. $\frac{1}{2}$ N. is the nearest island of the same group, distant 3.7 miles, with a safe passage between them. The islets west of this are called 'Tsih tsz'-mei 七姊妹 or the Seven Sisters; the navigation in their vicinity is dangerous, having many reefs around and between them.

Leaving North Island to the westward, the easternmost and highest of the Seshan Group will be seen; it bears north 18 miles from North Island. A vessel beating up between these islands should not bring the High Seshan to the eastward of north, until within three miles of it, for there was found a $3\frac{1}{2}$ fathoms' patch with the island bearing N. by E. The Seshan Islands form three distinct groups, the easternmost having one large and five smaller islands with rocks. There is a safe passage between them and the main, which is very low, and continues so to Chapoo.

The middle group lies 6 miles to the W.N.W. of the eastern, and consists of one large and several small islets, the southernmost of which is low and rugged, with reefs around it. There is a safe passage between this group and the main.

The western group consists of two islands, $11\frac{1}{2}$ miles to the north-west of the middle group; the largest is about 700 feet high, and has no passage between it and the main. Having made the Eastern Seshan, pass to the northward or southward of it as convenient, — if to the southward within 3 miles. Steering westerly from this, pass within 2 miles of the middle group, from which in clear weather, the high land of Chapoo, bearing west 23 miles, may be seen; also the Fog Islands, a group of low rocky islets bearing S. 75° W., 14 miles.

Vessels are recommended to keep well to the northward of the Fog Islands in approaching Chapoo, as by this they will insure a depth of 5 and 6 fathoms; and also if a heavy breeze from the northward come on, can get shelter under the northern shore.

Chapoo 乍浦 city is situated on the western face of the hills forming the eastern point of Chapoo Bay; from this the land is low, rising again into hills at the distance of 8 miles. The mud runs off a long way from the low land between these hills, whose tops are crowned with buildings. One of the islands also has a large white joss-house on it. Pass within half a mile or less of the point of the southern island, then steer for the town, or the termination of the group of hills, and anchor in 7 fathoms. You will then be about half a mile from the high land to the northeast of the town. The anchorage is sheltered from E.N.E. to S.S.W., around by north. At the spring tides the velocity is 5 knots, and the rise and fall 25 feet.

Plover's Shoal. Strong Tides. Bay of Hangchau. Anchorage at Chapoo.

About 4 miles south of the southern island off Chapoo is a shoal, on which the "Plover" tacked in 3 fathoms, and there is probably less water. Should vessels find themselves setting to the southward of this, they must anchor.

Seven miles southwest from Chapoo, during a stay of three days, the night tide rose 30 feet, and its velocity was $7\frac{1}{2}$ knots; while at the Fog Islands, ten miles to the southeastward, the rise and fall was 17 feet, and the velocity $4\frac{1}{2}$ knots; showing a rapid increase in rise and velocity as you enter the estuary of the Tsientang River.

The steamer "Phlegethon," with Capt. Collinson on board, reconnoitering and endeavoring to find a channel to Hangchau foo, experienced a tide of $11\frac{1}{2}$ knots; at this time he was distant from the high land of Chapoo 19 miles, and two from the shore. On a second trial at the dead of the neap, the "Phlegethon" had the tide running $5\frac{1}{2}$ knots at nearly the same place. In traversing the river from side to side, which is at this point about 15 miles wide, there was no continuous channel found, although some deep spots. When the "Phlegethon" was exposed to the above tide, she had an anchor down with a whole cable, (having previously lost an anchor and cable, when she endeavored to bring up,) was under her full power of steam, with sails set, and was still driving.

It will hardly be needful, therefore, to impress on the minds men navigating the Bay of Hangchau, the importance of their paying particular attention to the set of their ships. This bay cannot and ought not to be navigated at night. The rapid flood-tide setting into this bay caused the loss of the transport "Kite," in 1840.

Capt. Bethune adds the following notice of the passage into Chapoo Roads.

Chapoo is situated on the north side of a bay on the northern side of the Bay of Hangchau. The points of the entrance are 5 or 6 miles apart. Rather towards the north entrance lie North and South Islands, about $1\frac{1}{2}$ mile from the shore, and $\frac{2}{3}$ of a mile apart; they are not easily distinguished from the high land in their rear. On the top of the high conical hill, forming the starboard entrance, are one or two buildings; and rather more than half-way down is a fort, having 4 guns. These are conspicuous objects. The town is situated to the left of the hill, in a small nook; it is defended by a battery and breastwork. The soundings decrease regularly from 10 to $3\frac{1}{4}$ fathoms close in to the town, and the "Algerine" anchored in $3\frac{1}{4}$ fathoms mud, distant from the town battery about 500 yards, with the following bearings: fort on the hill, NE. by E. $\frac{1}{4}$ E.; South Island, E. by S. $\frac{1}{2}$ S.; remarkable pagoda, W. by S. $\frac{3}{4}$ S.

Running for the anchorage, round South Island, at 2 cables' distance, and haul up for the junks at anchor, when the fort on the hill bears NE. by E. about a mile, you will find from 7 to 9 fathoms steep ground, and shelter from all winds but SE. to E.SE.

*The Volcanoes.**Anchorage near Rugged Is.**Course to Gutzlaff I.*

Section 12.

DIRECTIONS FROM SQUARE ISLAND TO SHANGHAI.

N. 76° E., 9 miles from North Island, and N. 45° W., 3½ miles from Broken Island, is situated a small group of islands, between which and North Island, there is a good channel, and the group itself may be approached as convenient.

N. 50° E. from North Island, distant 9½ miles, is the northwestern-most islet of a group called the Volcanoes; it has a reef north of it; on the highest island, there is a most remarkable conical peak. The channel between this and North Island is safe, if it be kept in mind that you are not to bring East Seshan to the eastward of north. There are several islands between this group and Tae shan, but they have not been examined.

Continuing on the northeastward, the high land of the Rugged Islands will soon be seen. The southwestern horn of this group bears from North Island, N. 33° E., 24 miles, and from East Seshan N. 86° E., thirteen miles. There is excellent shelter between the southwest and northwest horns of this group during the southwest monsoon. The fleet under Admiral Parker anchored here in the month of June, before proceeding up the Yangtsz' kiang.

During the northern monsoon, vessels will find good shelter to the southwest of the whole group, but the ground has not been thoroughly examined between it and Tae shan. The whole space between the Rugged, East Seshan, Volcanoes, and North Islands, is safe, having a depth of from 6 to 7 fathoms.

N. 33° E., 3¾ miles from the northern horn of the Rugged Islands, is a small islet with several rocks to the northwest of it, called the Hen and Chickens; and from the same horn Gutzlaff's Island bears N. 43° E., 12 miles. Leaving the Rugged Islands, a vessel may pass on either side of the Hen and Chickens in 6 and 7 fathoms. Between the Hen and Gutzlaff Islands, there is also a safe passage with 6 or 7 fathoms. A vessel may pass on either side of Gutzlaff Island, but if to the westward of it, she must go very close. It is recommended to pass to the eastward of it, and then steer N. 25° E. for the Amherst Rocks, which are distant from Gutzlaff Island 24 miles, taking care to keep Gutzlaff Island on that bearing; for if the wind is light, and it is flood tide, a vessel will be set into the Bay of Hangchau foo.

Vessels of light draught may navigate the Yangtsz' kiang with ease and safety, but it will be necessary for vessels above 18 feet to make the Amherst Rocks, (which are 20 feet above the sea, and in lat. 31° 9.3 N., and long. 122° 23.6 E.) and to have beacons placed for them to sail by. Leaving the Amherst Rocks at a quarter ebb, a vessel will carry the flood to Wusung if there is any wind.

*Ariadne Rocks.**Thence to Wusung.**Course to Shanghai.*

The following courses will insure deep water. From the Amherst Rocks S. 72° W., $14\frac{1}{2}$ miles, but care must be taken that the vessel really makes good this course, and that the flood tide does not sweep her to the northward of that bearing, which is given to clear the Ariadne Rocks. The sea breaks on the Ariadne Rocks in strong winds, and the lowest tides. The bearings from these Rocks are, Amherst Rocks, N. 77° E., $7\frac{1}{4}$ miles; Shau-e-shan, or Sha-wei shan, N.; Gutzlaff Island, S. 9° W..

After passing the Ariadne, should the northeast break or ripple be seen, it will be the best leading mark, for the deepest water is close to the bank. The course along it will be about NW. $\frac{1}{2}$ W.; it bears from Shau-e-shan S. 30° W., and is distant from the Amherst Rocks, 16 miles. If it is not seen, having run the first course and distance, a course N. 61° W. will take a vessel in mid-channel to Wusung; but as the strength and set of the tides will materially affect the ship's course, vessels are recommended to use the ground log, both for course and distance.

Having run 24 miles on the second course, approach the low western land to one mile; at this time a clump of trees making like three will be seen; keep this distance from the bank until a remarkable high tree is seen (if it be clear). At the same time will be seen Paoushan Point, which is the sharp angle of an embankment; when within a mile of the High Tree Point, increase your distance from the shore, and do not bring Paoushan Point to the northward of W. by N. $\frac{1}{2}$ N.

The best anchorage off Wusung will be Bush Island, NW. by W., and Wusung village joss-pole, S. 41° W., in 8 fathoms. The leading mark into Wusung is the joss-poles at the village, S. 41° W. But the best leading mark will be for a vessel at anchor in the above position, to place one of her boats for a beacon. When the low point below the embankment shows clear of Paoushan Point, close the western or Wusung shore to half a cable, where there is good anchorage.

Proceeding from Wusung to Shanghai, keep the western or left bank on board until you open the second creek on the opposite shore, which will be a mile above the village; then cross over and keep the eastern shore close on board, the channel being in some places scarcely a cable wide. Should the flood run strong, haul over as soon as you have rounded the low point opposite the village. The narrowest part is opposite to a low point on the western shore above the batteries. The bank here forms a point, with a remarkable tree on it; it is $7\frac{1}{2}$ miles by the river from Wusung village.

Having passed this point keep in mid-channel. Before arriving at the town, which is $5\frac{1}{2}$ miles above it, the river takes a sudden turn to the southward, and the western or right shore again becomes the deep side. The mud extends nearly a cable from the point at the turning; between it and the town shore, there is a deep hole, with 12 and 18 fathoms, but off the town there are $3\frac{1}{2}$ and 4 fathoms.

<i>Deadman.</i>	<i>Blonde Rock.</i>	<i>Anchorage near Square I.</i>	<i>North Is.</i>
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Section 13.

THE ENTRANCE TO THE YANGTSZ' KIANG.

This survey was made under the direction of Captain C. R. Drinkwater Bethune of H. M. S. "Conway," when stationed off the mouth of the river in 1840. It goes over part of the same course with the two last sections.

ARRIVING in the Bay of Ningpo from the eastward, care must be taken to avoid a tide rock, which lies a short half mile to the northward of the Deadman. The bearings from the rock, by compass, are as follows: left extreme of Square Island, N. 65° W., or W.N.W.; left extreme of the islet north of Kintang, N. 5° E., or N. $\frac{1}{2}$ E.; right extreme of Dumb Island, S. 52° W. or SW. $\frac{3}{4}$ W. Passage Islet shut in by the south extreme of the Triangles, or the Beacon Hill on with the fort (Chaou paou), clears the rock.

The Blonde Rock, which shows itself at low water, is three quarters of a mile to the northward of the Deadman.

There is a patch, with $2\frac{3}{4}$ fathoms, southeast by south from Square Island, distant half a mile; the Beacon Hill on with the fort also clears the patch. The "Conway" lay in a good berth, having Passage Islet south, and Square Island east-northeast. This anchorage during the summer season is safe; but during the autumnal and winter months, strong northerly breezes prevail, and then shelter must be sought over on the Kintang shore, or off Just-in-the-way, (called by the Chinese Hwang-new tsiaou 黃牛礁,) bringing it to bear northwest about one mile. The steam-vessel "Madagascar" anchored under Passage Islet during a blow, but was glad to get out to Just-in-the-way.

A rock awash at low water spring tides, has been seen about S.S.E., 2 cables from Just-in-the-way. Consequently vessels passing to the southward of that island should be cautious not to approach too close.

The reef off the south end of Silver Island, and a $2\frac{3}{4}$ fathoms' patch to the S.W. of Square Island, have already been noticed.

Running to the northward, pass on either side of Square Island, and then keep over towards Kintang, so as to bring Square Island to bear south as soon as possible; do not bring it to the eastward of this bearing, as the western part of the bay is supposed to be shallow, a patch of 3 fathoms having been passed over, lying N. by W., 3 miles from Square Island.

Proceeding to the northward, you pass the North Islands to port, the largest and easternmost being about 220 feet high, with an islet north of it. To starboard is a small island, named East Island, with 3 or 4 islets or rocks north of it; and to the northward of this lies Middle Group, the largest of which has a conical hill on its north end. Another of the group, west of the largest, is also high and conical; several islets and rocks lie west of this group, all above water.

Seshan Is. Hen and Chickens. Gutzlaff I. Dangerous Rocks. Sha-wei-shan.

Vessels may pass to the northward between Kintang and Black-wall. The water is deep in the Steward Passage; but when through, anchorage is found in 8 or 9 fathoms. Then keep to the northwest, leaving East Island to starboard. A vessel can pass to the eastward of East Island and of the Middle Group; but east of the latter, there is a bank, which has not been sufficiently examined. The "Conway" passed over it in 3 fathoms.

Steering still to the northward, you make, on the port bow, the Seshan Islands. On the starboard bow is a more numerous group, called Rugged Islands. Bottom was found at 6 fathoms throughout. Over the Seshan Islands, a solitary hill on the main will probably be seen, which is in the neighborhood of Chapoo.

Hauling to the eastward, around the Rugged Islands, a small islet, the Hen and Chickens, will be seen; and also, beyond this, to the NE., Gutzlaff's Island; it appears in this direction as a cone, and is about 250 feet in height. Gutzlaff's Island is supposed to be what the Chinese call Ma-tseih 馬磧 or 'Horse Rocks,' a name which needs verifying.

To the eastward lies a large group of islands, up to which you carry 6 fathoms; to the northward of these, at a distance of 8 or 10 leagues, lies Saddle Island, making in this direction one conical hill. To port the low land of the main will probably be seen. There is anchorage throughout in these parts from 6 to 8 fathoms.

To proceed still to the northward, steer N.NE. for the Dangerous Rocks. These are *not at all dangerous*, being 10 or 12 feet above water; passing these close, steer, if required, to the NW. for Sha-wei shan 沙衛山 or Shau-e-shan.

To enter the Yangtsz' kiang 洋子江 *i. e.* Child of the Ocean, with a large ship, it probably would be necessary to station a couple of small vessels, one on the edge of the outer bank, the other on the spit higher up. She might anchor 4 or 5 leagues off Gutzlaff's Island, while they were being placed. Attention to the following directions ought to carry a ship up in 20 feet.

Leaving Gutzlaff's Island, keep it on a S.S.E. bearing; and having run 7 or 8 leagues, Shawei shan will bear NE. by N. From this point the break or ripple on the bank should be seen, and you may steer NW. When you have got hold of the land, steer W.NW. The low land to port should be visible from aloft; and a tree sufficiently remarkable will be distinguished. Keep this tree two points on the port bow. It must be passed at a distance of at least two miles, as the bank extends far out from it. When the tree bears S. $\frac{1}{2}$ E., close the port shore to half or three fourths of a mile, steering NW. by W. for a large clump of trees. The soundings will now gradually increase to 9 or 10 fathoms.

The outer extreme of the fortifications at Wusung will be seen at 7 or 8 miles distance, abreast a clump called the Treble Trees; run on, keeping from half to a mile off shore, and anchor with the

*Channel near Bush I.**Point Harvey on Tsungming.**Winds, Tides.*

eastern fort S. by W., and the extreme of the wall NW. by W.; or you may select any other berth you prefer from the chart. Bush Island will be seen, the Bush bearing about north. A bar extends some distance from the mouth of the river, with $2\frac{1}{2}$ and 4 fathoms, deepening suddenly to 10 and 12 fathoms. Bush Island must not be approached nearer than $2\frac{1}{2}$ miles.

Being in mid-channel betwixt Wusung and Bush Island, steer about NW. by W., keeping $1\frac{1}{2}$ or 2 miles off shore, and you will shoal gradually from 8 to $4\frac{1}{2}$ fathoms; this point is about 2 miles off shore, abreast of the deepest bight; proceeding, you deepen to 14 fathoms, until abreast a grove or clump of trees, 17 or 18 miles from Wusung. When the west end of the trees on Mason Island begins to open of the west point of Tsungming (Point Harvey), steer to the northward, opening them gradually, and pass Point Harvey at half a mile distance; it is quite steep.

From Point Harvey, steer NW. $\frac{1}{2}$ W., on for 3 distant hills and a pagoda, approaching no nearer than 2 miles to Mason Island. When past it, steer west, keeping about mid-channel. The trees on Mason Island must not be brought to the southward of east, to avoid a shoal running out from the north shore, one third of the distance across. When the Pagoda Hill bears NW., and a large bush on the south shore S. $\frac{1}{2}$ W., you are abreast the shoalest part, and must steer NW. by W. $\frac{1}{2}$ W., for Round-tree Point, distant four miles. The soundings about this point are deep and irregular. When past it, and abreast of a creek and mud fort, the bank is very steep, shoaling from 20 to 2 fathoms, and then to 4 feet. This you avoid by keeping the large bush in sight SE. by E. $\frac{1}{2}$ E.; and a course W. by N., 8 miles, leads abreast of a small circular fort and other buildings, the highest point reached by the "Conway." The whole south shore appears very shoal to half or a mile off. The channel from this point runs probably about N.NW., but it requires examination. Running in from seaward, the most eligible land to make is Saddle I.; no land was seen north of it from the summit of Shawei shan.

Winds, Tides, &c. Off the Seshan Islands, the time of high water at full and change, is 11h. 45m.; rise 12 feet. The flood sets W.NW.; the ebb E.SE. Generally off the mouth of the river, it is high water on full and change days at about noon, or half an hour after. The rise at springs is 13 feet; at neaps, 10 feet; once 18 feet were noted, but this was probably caused by the ship having swung, so as to change her depth. The stream of the flood comes from the eastward, drawing to the southward about its last quarter, passing around to the ebb from the westward, and so on around by north. The greatest velocity measured was $4\frac{1}{2}$ knots, off the northern entrances; but the usual velocity at springs is about $3\frac{1}{2}$ knots.

In the river off Wusung, high water at full and change occurs about 1h. 30m. The rise is uncertain, but ranges from 15 to 5 feet. The stream of flood comes from southeast, passing around by east to northward; the ebb comes from NW., passing around by south.

*Weather in the Yangtsz' Kiang.**Difficulty of the Entrance of the River.*

At the farthest point reached, high water, at full and change, occurred about 4h. 30m. The rise was 14 feet; the ebb running 8 hours. — The flood at the neaps was nearly obliterated.

In July, the barometer stood at 29.74; and the thermometer at 78°. The prevailing winds were southeast.

In August, the barometer stood at 29.78; and the thermometer at 81°. The prevailing winds were southeast, easterly, and northerly. For a day or two in this and the next month, there was blowing weather, with a little rain, at the change of the moon.

In September, the barometer stood at 29.90; and the thermometer at 77°. The winds variable, but drawing around from southeast to north. Mornings were colder than the average temperature, which having been taken on the main deck, is not probably very correct. The breezes appeared to increase in intensity at full and change. The barometer rose with the northerly winds, and fell with westerly and southerly. One hard blow occurred with the barometer at 30.10.

Section 14.

REMARKS ON THE PASSAGE UP TO SHANGHAI.

By Capt. W. Macfarlane of the "Island Queen."—Dec. 1851.

The directions given by the surveying officers are, I think, too vague to be of much use in practice to strangers; particularly, in giving courses and distances to be made good, when there are no marks available, and the strength and direction of the tide are constantly varying. The Admiralty Chart of 1843 is very correct; and every vessel bound to Shanghai should be provided with it.

Vessels bound to Shanghai should make the Barren Islands or Saddle Group in the northerly monsoon, as being the most weatherly land-fall; but in the southwest monsoon, it is more advisable to steer for Monte Video, a bold precipitous island, about forty miles southward. If late in the day, anchorage should be sought under the Saddle Islands, which afford shelter in both monsoons.

Leaving the Saddle Islands, keep the North Saddle bearing about SE. by E. to pass Gutzlaff Island, at a distance of about fifteen or sixteen miles; and no stranger ought to enter the river without seeing Gutzlaff, until some mark be erected for the North Sandhead. Thus far, the tide sets NW. by W. and SE. by E., from $1\frac{1}{2}$ to $3\frac{1}{2}$ knots; but it is affected greatly, both in direction and velocity, by the prevailing wind.

Steering on to the north-westward, bring Gutzlaff to bear S.SE., and sink it on that bearing, which will be at a distance of about twenty-two or twenty-three miles; after which steer NW. $\frac{1}{2}$ W., and if the low land be not soon seen on the port bow from the mast head keep more westerly by the lead, which is here a safe guide. The

<i>Saddle Is. to Gutzlaff I.</i>	<i>North Bank.</i>	<i>South Bank.</i>	<i>Tides.</i>
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deepest water is near the North Bank, which should always be approached with caution, as it shoals very suddenly. When the first point bears W. by N., or W., the water deepens to 6 fathoms; this point should be passed about 2 miles off, as the bank extends a long way out, and there are several knolls off it, on which ships have touched. Having passed the point, gradually close with the shore to a mile, and keep it about that distance, until the beacon at Wusung is seen. There are shoal patches a mile off shore, Blockhouse I. bearing north.

If working up from the Saddle Islands, do not bring Gutzlaff Island to the eastward of south, until fifteen or sixteen miles to the northward of it, when it may be brought to bear S.SE., and you will then be on the edge of the South Bank. You may now stand to the westward, nearly into the vessel's draught, bearing in mind that the flood sets W.SW. around the SE. edge of it, and the ebb contrary. All vessels should keep as near as possible to this Bank, and not wait for a shoal cast to tack when standing to the north-eastward.

I think the defect in the directions hitherto given, is chiefly, that vessels are not advised to get hold of the South Bank as soon as possible; and courses and directions to be made good are given, where there are no marks available, and the *strength and direction of the tide are constantly varying.*

From the Saddle Islands to Wusung, the tide generally sets NW. by W. and SE. by E. when fully made, if no cause, such as northeast gales or heavy rains interfere; but the flood makes *first* to the southward, then SW., and NW. at the entrance of the river; the ebb making north, passing by NE. to SE., and it is at turn of tide that most caution is necessary to avoid being set out of the channel. I have found the set of the ship pretty correctly by the deep sea lead, and have, on several occasions, gone up the river at night by its guidance. Having passed the first point, which the "Conway's" surveyors mention to be distinguishable by a large tree (although I could never make out any tree there sufficiently remarkable), work up from three-quarters of a mile to two miles off shore, and do not wait for a second shoal cast on the North side. The narrowest part of the channel is where the house on Blockhouse Island bears NE. by E. It is here about $1\frac{1}{2}$ mile wide.

When the ships at Wusung are open, a peaked tower near the town of Pausan will be seen to the westward; and on the embankment in front of it, a beacon, which must be kept a little open to the southward of the tower, until another large beacon at the entrance of the Shanghai river is on, between two joss-poles behind it painted red, and bearing W.SW. This last is an excellent mark for the channel, which is very contracted. The beacon may be brought a little open on each side of the poles, and the water shoals gradually on each side; but the tide does not set exactly fair through.

The foregoing remarks apply to vessels of a heavy draught, say eighteen feet. Small craft may use much more freedom, closing.

Guides to Wusung. Paushan Beacon. Light Vessel wanted off North Sand.

with the South Bank when Gutzlaff is twelve or fifteen miles off to the southward, and working up with the lead for a guide, never coming over half three fathoms, if near low water, to the north-eastward. The southern shore is to be depended on all the way; but when within 10 miles of Wusung, the bank is very steep, and should not be approached under $\frac{3}{4}$ of a mile.

I offer the following suggestions for rendering the navigation of the Yangtsz' kiang comparatively safe and simple, which may be effected at a trifling cost, considering the valuable trade of Shanghai. There is, off the southern end of the North Sand, a spit or patch, having 4 or 5 fathoms close to on each side, which is the principal danger on entering the river; and every vessel wrecked hitherto, with one exception, has been on this spit. I would therefore recommend that a *Light Vessel* should be placed in the bight, between this spit and the main bank, where, with good heavy ground-tackle, she would ride out any weather. A vessel of one hundred tons or thereabouts, strongly built, on the principle of the *Light* vessels at the Sand-heads of the Hoogly, would be large enough. She should be fitted with a light, to be distinguishable from a ship's light or those that the fishermen often show; and visible at least seven miles distant. She should be supplied with two good coir cables, as well as with chains, in order to enable her to ride to the high sea that sometimes occurs; and she should also be provided with a life boat, and a European, should continually be on board, sufficiently acquainted with the river, and with the indications of the weather, to warn vessels, by signal or otherwise, of approaching danger.

In addition to the light, I would place a buoy off the NW. end of the spit, and another off the south end, which, I think, are all that would be necessary in any ordinary weather; but in standing in from sea, I am decidedly of opinion that a stranger should not attempt to run in, unless certain of getting within the bar, if there are indications of bad weather; but rather, he should seek anchorage among the islands, or else put to sea for the night; the former would be preferable in heavy weather, for unless a good sailer, a vessel would not fetch up again in the NE. monsoon. The tides are so strong, and at times so uncertain in direction, that the best acquainted persons can not hope to keep a correct reckoning at night; and it would prove very rough riding, should a ship attempt to anchor between Gutzlaff Island and the North Sands in a gale.

I think it quite useless to attempt to erect a beacon on the Sand, with the means that would be available here; as the tide runs with great velocity, and I am not aware that any part of the patch has less than nine feet water on it. The flood often comes in with a heavy bore or roller, when a southerly wind is blowing; and I do not think that a sufficient foundation could be formed to justify the expectation of a beacon standing the combined action of the wind and tide. No doubt a beacon might be placed on the North Sand itself, where it dries, in many ways—for instance, by sinking a foun-

Beacon on the Sand. Beacon on Amherst Rocks. Beacons on shore. Poles.

dation in iron tanks; but it would be at a greater distance from the channel, and altogether it would be less useful than a floating light.

The following suggestions were made by Admiral Cochrane in 1846 for erecting beacons, and placing guides to facilitate the entrance to the Wusung River. The entire cost of the light vessel and beacons were estimated at about \$2200, with an annual charge of \$360 to maintain the crew of the vessel. Since they were made, the introduction of steam tugs has obviated the need of some of the beacons, but not of the light-vessel spoken of by Capt. Macfarlane.

"The difficulties attending the navigation of the Yangtsz' kiang from its entrance to the Wusung river, commence after passing Gutzlaff's Island and losing sight of it, which frequently is the case in foggy weather, when not above eight or ten miles from it, although on a clear day the island is visible at the distance of 27 miles.

"On losing sight of the beforementioned island, there is nothing to guide the eye until you have advanced far up the river even in clear weather, and as the land on the southern bank is very low, you must go considerably further in hazy weather to obtain an object to do so; in the meantime the lead is the only guide, but which, from the velocity and irregularity of the tides or current, will not indicate how far a vessel has ascended the river, nor can one be very sure always as to the side of it on which he may be; and the northern bank is dangerous to approach in consequence of deep water running close up to the sand.

"Under these circumstances it is most desirable that vessels entering this river should have marks leading from one to another until so far advanced in it as to be able to carry four fathoms water within two or three miles of the southern shore. For which purpose, as well as to conduct a ship in safety into the Wusung River, and from thence to the port of Shanghai, it is recommended that the following arrangements should be made:—

"1st. On the starboard hand going in, a stone beacon to be erected on the Amherst Rocks, elevating them twenty feet higher than they are at present.

"2d. A Chinese boat, with a beacon pole raised upon her fifty feet high, surmounted by a suitable top; to be anchored within the Horse-shoe of the sand called "*Tungsha*." Hereafter a light boat may be substituted for her.

"3d. One beacon, fifty feet high, on the right bank of the river, placed, if possible, so as to be taken up on losing sight of Gutzlaff's I. in hazy weather.

"4th. One beacon forty feet high on a point already chosen by Capt. Collinson, and which will bear from the beacon boat S.S.W. $\frac{1}{4}$ W. by compass, seven miles.

"5th. One pole with a suitable top placed near the angle of the fort of Paushan, which, coming on with a whitewashed mark already placed, to be a leading mark to the entrance of the Wusung river.

"6th. Three high poles, painted in different colors, to replace three trees now existing, as marks for advancing in the river; and one painted board, six feet square, elevated forty feet, to be placed under these poles where a temporary board now exists.

"7th. One transporting buoy properly moored on the port-hand entrance to the river.

"8th. Three other similar buoys, to be placed as marked by Capt. Collinson, to indicate the narrowest pass of the river to Shanghai; and to answer at the same time as warping buoys through the said narrows."

Position of places from Cape of Good Hope to Double Peak.

Section 15.

PLACES BETWEEN AMOY AND SADDLE I.

This list appertains entirely to the surveys in Sections 2, 3, 8, 9, and 12; and the positions are given nearly according to the latitudes of the places, commencing at the south. Many of those already given in the surveys are here omitted.

PLACE AND SPOT; WITH THE CHINESE CHARACTERS AND PRONUNCIATION IN THE COURT DIALECT.	N. LAT.			E. LONG.		
	Deg.	Min.	Sec.	Deg.	Min.	Sec.
Cape of Good Hope, - - - - -	23°	14'		116°	47'	
Dodd's I. 北錠 Pehting, - - - - -	24	26.6		118	29.4	
Chapel Island, 東錠 Tungting. - - - - -	24	10.3		118	13.5	
Hoo-e tow bay; east point, 圍頭 Weitau. - - - - -	24	31.		117	31.5	
Chimmo Bay; pagoda; 姑嫂塔 Kú-sáu táh. - - - - -	24	42.		118	42.	
Islet in Chinchew Bay, - - - - -	24	45.		118	44.7	
Ockseu I.; high part of West I. 烏坵 Wókiú. - - - - -	24	59.3		119	29.1	
Lamyet I.; western peak. Chungtung shán. - - - - -	25	12.3		119	36.	
Double island, - - - - -	25	15.8		119	42.3	
Pagoda, - - - - -	25	22.2		119	41.9	
Three Chimneys; summit, 639 feet. - - - - -	25	22.1		119	45.3	
South reef, - - - - -	25	23.1		119	51.5	
Turnabout I.; highest part 牛山 Niú shán. - - - - -	25	26.		119	58.7	
Haetan 君山 Kiun shán; peak, 1420 feet. - - - - -	25	35.7		119	51.3	
North rock, - - - - -	25	45.4		119	50.8	
White Dogs; breakwater. 白犬 Peh-kiuen. - - - - -	25	58.1		119	57.6	
Fuhchow foo {	city, 福州府 Fuhchau fú. - - - - -	26	05.	119	20.6	
	pagoda, 羅星塔 Ló-sing táh. - - - - -	25	59.6	119	29.1	
	temple, 福斗 Fuh-tau. - - - - -	26	08.7	119	39.8	
	Sharp Point, 586 feet. - - - - -	26	08.3	119	42.4	
Outer reefs, - - - - -	26	05.		119	51.5	
Sea Dog, - - - - -	26	05.2		120	04.	
Matsoo shan; summit, 馬祖山 Mátsoo shán. - - - - -	26	09.2		119	58.2	
Changche shan; do. 長岐山 Chángki shán. - - - - -	26	14.		120	01.8	
Alligator Island, 東沙 Tungshá. - - - - -	26	09.		120	25.8	
Larne Rock, - - - - -	26	15.8		120	14.2	
Larne islet; highest part, - - - - -	26	21.3		120	14.8	
Yung-tseigh; do. 853 ft. 東永 Tungyung. - - - - -	26	23.2		120	31.2	
Spider peak, - - - - -	26	30.6		120	04.2	
Double peak, {	Cone I. - - - - -	26	30.	120	10.	
	The paps, 1190 feet high. - - - - -	26	36.1	120	11.2	
Pihseang shan; peak, 北礮山 Pehsiáng shán. - - - - -	26	42.4		120	22.6	

Position of Places between Taeshan Group and Sheipoo.

PLACE AND SPOT; WITH THE CHINESE CHARACTERS AND PRONUNCIATION IN THE COURT DIALECT.		N. LAT. Deg. Min. Dec.	E. LONG. Deg. Min. Dec.
High I. 福瑤山 Fuyáu shán, summit, 1684 ft.		26° 56.1	120° 22.6
Taeshan group; highest, 臺山 Táishán.		26 59.2	120 43.8
Sunken rocks between Pihquan and Taeshan.		27 02.4	120 38.6
Pihquan; three chimneys, 北關 Pehkwán.		27 09.7	120 32.6
Rocks north of Taeshan,	} Eastern - -	27 03.5	120 51.7
	} Northern - -	27 05.6	120 49.4
Intensity group {	Observatory I. - - - - -	27 26.3	121 06.6
	South islet, - - - - -	27 20.3	120 51.2
	Eastern islet - - - - -	27 27.6	121 08.
	Cone islet, - - - - -	27 27.3	120 57.6
	Nanke shan; h. part. 南岐山 Nánkí shán.	27 27.2	121 03.3
Intensity group {	Pihke shan; do. 北岐山 Pehkí shán.	27 37.3	121 12.3
	Entrance to Wanchow foo, 温州府 - -	27 57.5	120 52.
Half tide rocks W.S.W. of Miaoushan. - -		27 48.4	120 56.3
Miaoushan; 尾岙山 Wíyáu shán, h. p. 737 ft.		27 51.6	121 02.5
Tongtau shan, E. point 洞頭山 Tungtau shán.		27 48.	121 07.4
Coin island; 183 feet. - - - - -		27 50.	121 15.
Laouka; peak, 九甌山 Kiúki shán. - -		27 59.2	121 10.8
Pesan; summit, 披山 Pi shán. - - -		28 05.5	121 31.8
Taluk shan; do. 771 ft. 大鹿山 Táluk shán.		28 06.	121 24.4
East islet off Teaou pangmun. - - -		28 15.9	121 44.6
Chikhok; summit, 761 ft. 積谷山 Tsihku shán		28 22.4	121 44.2
Taichow group {	Heachuh shan, finger rock, 下竹山 - -	28 23.	121 55.3
	Hea tachin shan, } highest part. 下大陳山 - -	28 26.2	121 53.7
	Shang tachin shan, } 上大陳山 - -	28 28.9	121 54.4
	Northern islet. - - - - -	28 31.8	121 55.9
Entrance to Taichow foo 台州府 - -		28 39.1	121 36.9
Chuhseu; 竹嶼 Chuh sü, highest part, 671 ft.		28 40.5	121 47.4
Tungchuh sen; 東機山 Tungki shán do.		28 42.2	121 55.1
Heshan group, {	high part of South I. 320 feet.	28 50.8	122 14.4
	northern islet, 黑山 Heshán.	28 55.2	122 16.8
St. George's I.; bay on south side. - -		29 06.2	121 53.9
Tafuh tow, 大佛頭 Táfu tau. - -		29 05.8	121 58.6
Leaming; peak. - - - - -		29 02.1	121 55.7
Islets of Samoon; easternmost. - - -		29 01.1	122 02.3

Position of Places between Cape Montague and Saddle I.

PLACE AND SPOT; WITH THE CHINESE CHARACTERS AND PRONUNCIATION IN THE COURT DIALECT.	N. LAT.		E. LONG.	
	Deg.	Min. Sec.	Deg.	Min. Sec.
Sheipoo city, 石浦 Shih-pó. - - -	29°	12.8	121°	57.1
Cape Montague; high. part. 738, 壇頭山	29	10	122	02.5
Half-tide rock, - - -	29	15.3	122	09.
The Bear; peak. 大目山 Támuh shán.	29	23.5	122	0.4
Patahecock; high p. 八字角 Páhtsz' kioh.	29	21.9	122	13.7
Whelps; centre. - - -	29	29.4	122	05.1
Mouse, 鼠山? Shú shán. - - -	29	32.7	122	13.6
Mesan and Lanjet; highest p. 四礁 Sz' tsiáu.	29	36.5	122	09.2
Buffalo's Nose; 牛鼻山 Niúpí shán, high p.	29	36.2	122	01.4
Front Island; high part. - - -	29	37.2	122	13.2
Lowang cape, 六橫 Luh-hwáng. - - -	29	47.6	122	07.5
Tree-a-top, 温州嶼 Wanchan sii. - - -	29	42.4	122	0.5
Beak head; E. extreme 銅鑼龜 Tungló kwei.	29	40.9	122	17.4
Vernon I.; E. extreme 蝦岐山 Hiákí shán.	29	44.2	122	18.8
Kitto, 岐頭 Kí-tau. - - -	29	52.9	122	07.7
Suburbs of Tinghae, temple hill. 衛頭 Táutau.	30	0.4	122	06.4
Roundabout Island. - - -	29	53.7	122	09.3
Bell Island, 馬秦 Matsin, - - -	29	52.2	122	16.
East islet off Chookia tsien. - - -	29	51.7	122	35.8
Reef near the same. - - -	29	58.6	122	33.8
Chuttatham; cone. 朱家尖 Chúkiá tsien.	29	54.	122	25.3
Just-in-the-way, 黃牛礁 Hwángniú tsiáu.	29	57.7	121	54.2
Kintang peak, 金塘 Kintáng. - - -	30	01.7	121	54.7
Steward, 半洋礁 Pwányáng tsiáu. - -	30	0.9	121	57.
Pooto I. 普陀 Pútó. - - -	30	0.3	122	23.5
Broken I.; highest part 馬目山 Mámuh shán.	30	09.7	121	57.8
Landing place, 小沙 Siáushá. - - -	30	09.1	122	4.4
Fisher's Island, 長白山 Chángpeh shán.	30	11.3	122	03.2
Monte Video; Summit. - - -	30	07.8	122	46.2
Houbland I., highest part 岱山 Tái shán.	30	15.4	122	11.4
Sheppey island, 蘭秀山 Lánshíu shán.	30	10.3	122	10.5
Blackheath, 長塗山 Chángtú shán.	30	15.6	122	16.5
Barren Island, - - -	30	43.	123	07.
North Saddle Island, - - -	30	50.	124	41.

<i>Shantung Promontory.</i>	<i>Alceste I.</i>	<i>Chuhshan.</i>	<i>Shamo.</i>	<i>Toki.</i>
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Section 16.

FROM SHANGHAI TO THE PEI-HO.

These observations were compiled from the journals kept on board H. M.'s ships "Wellesley," "Pylades," and others forming Admiral Elliot's squadron in 1840. Only those paragraphs which refer to places north of Shanghai are here introduced.

On the 31st of July, 1840, H. M. ship "Wellesley" left the Kew-shan Group for the Gulf of Cheihle.

Shantung Promontory. From our leaving the Kew-shan Islands until the 4th of August, being then in lat. $35^{\circ} 12' N.$, and long. $123^{\circ} 35' E.$, the wind was from the southeast with misty weather. It then drew round to the S.S.W., still continuing hazy. On the morning of the 5th of August we observed the Promontory of Shantung, a high bold point, with a rugged termination towards the sea, and a small pagoda near its end.

Alceste Island is small but high, and appears surrounded by reefs. A rock, high above water off its northeast point, bore S.S.E. when on with the north point of Shantung. There is a small island about 5 miles to the westward of Alceste Island. The promontory north-west of Shantung is high and rugged, having a small barren island near it; opposite to the island is a bay with a sandy beach.

Kungtung 崧峒 (Kungkung-tao) and *Chefow 芝罘*. The north rock of the Kungtung Group is high and square. Cape Chefow is high, and at a distance from the eastward, appears like an island; to the southward is a remarkable hill with a top resembling a chimney.

Chuhshan 竹山. At 6 P. M., with the northern rock of Kungtung bearing S. by W. $\frac{1}{2}$ W., and Chefow SW. $\frac{1}{2}$ W., Great Chuhshan was plainly visible from the poop, NW. by W. $\frac{1}{2}$ W., about 11 leagues distant. The ship anchored for the night in $11\frac{1}{2}$ fathoms, with the Great Chuhshan NW. by W. $\frac{1}{4}$ W.; Cape Chefow. S.S.W. $\frac{1}{4}$ W.; north rock of Kungtung, S. by E. easterly. Very little tide or current was found at this anchorage. Weighed the next morning at daybreak, and carried regular soundings of 12 to $10\frac{1}{2}$ fathoms towards the Great Chuhshan, which is higher than the island in its vicinity, and although of a very barren appearance has a small village on its SE. side, and cattle were observed on the hills. Little Chuhshan bears N. $85^{\circ} 40' E.$ from Great Chuhshan, distant about 3 miles.

Shamo 沙磨. A small island, named Shamo, lies N. $57^{\circ} W.$ from Great Chuhshan, and N. $15^{\circ} W.$, about three miles from Little Chuhshan.

<i>Villages on Toki.</i>	<i>Machang shih.</i>	<i>Quoin.</i>	<i>Houki.</i>
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Toki 砒 磯 lies about 7 miles to the northwestward of Shamo. The "Wellesley" subsequently visited the island twice; it is moderately high, and has a high peak near the centre; it is nearly the form of a right-angled triangle, the shortest sides being those upon the south and west. There are four villages upon the southern side, and one or two on the side facing the northeast. This island is well cultivated, and fresh provisions, vegetables, and water may be obtained. On the ship's first visit, 34 bullocks were procured, which, though small, were in good condition; a quantity of poultry, eggs, and vegetables, and from the wells at the villages upon the south side of the island, 30 tons of water were obtained in a day. On the second visit, 15 bullocks were procured. The "Wellesley" was anchored in 10 fathoms muddy bottom, with Machang shih, a small but high islet off the southwest end of Toki, bearing N. 78° E., and Toki from N. 64° W. to N. 56° E. A rock high above water off the southeastern end of Toki bore N. 78° E.; Great Chuhsan, S. 45½° E. The ship was 910 yards S. 11° 20' W. from the southeastern point of a little bay, at the head of which is a small village. This point is in lat. 38° 9' 20" N., and long. 120° 52' 17" E., or 1° 16' 30" west of the Pagoda Hill on Chusan. Variation, 1° 20' W.

The whole of this part appears perfectly clear with regular soundings; the little rock at the southeastern end of Toki, and the small island of Machang shih at the southwestern end, may be passed within a cable's length. The whole of the channels between these islands are said to be clear, with the exception of the channel between Toki and the islands north of it, nearly in the centre of which there is said to be a small sunken rock, with about 5 feet water on it, and deep water all a round. The information respecting this rock was derived from the people at Toki.

Quoin or Kiaoushan. The "Wellesley" passed twice between Toki and the Quoin, and twice between the Quoin and the island south of it, called Se Keusan in the charts, carrying in each case regular soundings 10½ to 14 fathoms. There is also a very good passage, with the same depth, between the Heshan or Miaotao Islands and Keusan. In a strong wind from the north we anchored under the Quoin in 12 fathoms, with that island bearing from N. to N. 26° E., about one mile distant; Chuhsan bearing S. 68° E., and Toki from N. 47° E. to N. 72° E. In the Admiralty charts, a rock is laid down to the southward of the Quoin, but we found it perfectly clear in that direction.

Houki 候 鷄. The island to the southward of it, called Houki (on the charts written Keusan), has a reef running some little distance from its northern end, and another off its eastern end.

From the Quoin, H. M. ship "Wellesley" sailed from Toki on the 18th of September at 6 A. M., with the tide running to the westward, carrying a depth of 10 and 10½ fathoms' water from the anchorage, until passing the southeast end of Houki, where it deepened to 13 and 14 fathoms, then shoaled again to 10 and 9 fathoms.

<i>Heshan Is.</i>	<i>Tangchow foo Bay.</i>	<i>Marks into it.</i>	<i>Channel.</i>
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Heshan, or Miaotao Group. When passing the west point of the Heshan islands, to which we gave a berth of 3 miles to avoid a reef that extends from the west point in a southwest direction $1\frac{1}{2}$ to 2 miles, and which broke when we passed it, after having rounded the southwestern point of the Heshan island, we hauled up gradually to the eastward, carrying a depth of 7 fathoms. The first anchorage was in $6\frac{3}{4}$ fathoms, good holding-ground, with the western Heshan island bearing from N. 38° W. to N. 15° W.; and Long Island, or Chang shan, the easternmost of the group, from N. $53^{\circ} 40'$ E. to S. 78° E.

The next day, we weighed and ran further to the E.N.E., and anchored in 6 fathoms' mud, with a rocky islet off the West Heshan bearing N. $62^{\circ} 40'$ W.; the SW. point of Long Island or Changshan being N. 3° E., distant $\frac{4}{5}$ of a mile; Bluff Point, with a fort on it at the west side of the entrance to Tangchow foo, bore S. $15^{\circ} 20'$ E.; and the pagoda on the hill over Tangchow foo, 登州府 S. $6^{\circ} 20'$ E. Variation, $1^{\circ} 32'$ W.

There is an extensive and good anchorage under these islands. The holding-ground is good, and soundings regular from 6 to 7 fathoms' water, and sheltered from all winds, except the westward, and even with a strong wind from this quarter the land is sufficiently near to prevent any sea from rising; and should it blow so hard from the westward as to prevent a vessel riding in safety, she might weigh, or slip and run out through the eastern passage. We could discover no danger to the southward of these islands, except the shoal running off the southwestern point of the Heshan Islands, and a spit extending $1\frac{1}{2}$ mile or more from the southwest end of Chang shan. This spit has irregular soundings, $4\frac{1}{2}$ and 2 fathoms, and the latter depth near to its southern extreme. A small round hill, with a heap of stones on it, forming the extreme of the land to the northeastward of a village on the central island, kept open of the southwest point of Long Island, N. 30° W., will lead outside the shoal in 5 fathoms. The southwest point of Long Island is a low bluff, of a reddish color. The hill which forms the mark is low; and to the northeast of the village is another hill higher than this, having also a heap of stones on its summit.

Another mid-channel mark is to bring two distant points on the main land in one line with each other, bearing S. 73° E. When the whole of Toki comes open of Long Island, N. 4° W., you will be to the eastward of the shoal, and may haul out to the northward.

As a stranger may have some difficulty in distinguishing the leading marks, he had better keep nearly as possible in mid-channel between Tangchow foo and Long Island, not coming too near the main to avoid a reef of rocks which extends 2 or 3 miles to the northward from the east of Tangchow foo, with deep water near it.

The south side of Long Island, to the westward of the spit, is clear, with 6 and 7 fathoms within half a mile of the beach. There is

*Miaotao Group.**From Toki to the Pei-ho.**Shaluytien Is. and Shoal.*

also the same depth near the south side of Middle Island; between these two islands a deep bay is formed, with a depth of 3 fathoms, where small vessels might be well sheltered. The southwest point of Long Island is in lat. $37^{\circ} 54' N.$, and $120^{\circ} 48' 30'' E.$, or $1^{\circ} 20' 15'' W.$ of Pagoda Hill in Chusan.

The Miaotao Group is composed of 4 principal islands, and some rocks or islets. To the west are the Greater and Lesser Heshan 黑山 or Black Islands, the small middle island is Miaotao 廟島 or Temple Island), and Chang shan 長山 or Long Island, considerably the largest, is the easternmost. The harbor for Chinese junks (which is the port of Tangchow foo), is the bay formed between Miaotao and Chang shan.

From Toki towards the mouth of the Pei-ho. From the Quoin, the "Wellesley" steered a W.N.W. course towards the Pei-ho, carrying regular soundings 12 and 14 fathoms' water, until in latitude $38^{\circ} 41' N.$, and longitude $118^{\circ} 15' E.$, when it shoaled to $9\frac{1}{2}$ fathoms, and then decreased gradually to 6, in which depth the ship was anchored in lat. $38^{\circ} 55\frac{1}{2}' N.$, and long. $118^{\circ} 4' E.$ From this anchorage the land (which is very low near the entrance of the Pei-ho,) could scarcely be distinguished in clear weather. The Chinese call this river the Pei-ho 白河, or White River, but the branch leading up to the city of Tientsin 天津府 usually takes its name from that place.

At another anchorage in 6 fathoms, in lat. $38^{\circ} 58' N.$, and long. $118^{\circ} 7' E.$, a fort at the entrance of the Pei-ho, seen from the mast-head, bore N. $87^{\circ} W.$ by compass.

About 7 miles to the eastward of this anchorage is the southwest point of an extensive shoal, composed of coarse sand and rocks, to avoid which; when running in for the anchorage off the Pei ho, a ship should keep 2 or 3 miles to the southward of $38^{\circ} 59' N.$, until the water shoals to 8 or 7 fathoms, when they may keep to the northward, anchoring so as to be sheltered from the sea which sets in during strong N.E. winds.

The Shaluytien Islands 沙壘田 are low and apparently barren. The Chinese name, which signifies 'fields of sand,' very well describes them. The southernmost of these islands has a small temple upon it, which, standing alone and upon an elevated spot, is conspicuous. We passed on two occasions about 8 or 9 miles to the southward of the island, carrying $12\frac{1}{2}$ to 14 fathoms, but the "Volage" had 20 fathoms within a mile of the island. The temple is in latitude $38^{\circ} 55' N.$, and long. $118^{\circ} 37\frac{1}{2}' E.$, by good observations taken both times in passing.

From the Quoin, the anchorage off the Pei-ho is W.N.W., and the distance 46 leagues, with regular soundings of 12 and 14 fathoms. After a strong southeast wind, we were set considerably to the northward; therefore, in running to the westward, care must be taken to

*Mouth of the Pei-ho.**Tungtsze kow Bay.**End of the Great Wall.*

avoid the dangerous shoal off the Shaluytien Islands. The latitude of the southern island is $38^{\circ} 53' N.$, and longitude $118^{\circ} 45' E.$; from this, the shoal extends about W.N.W. The northwest end bore from the anchorage off the Pei-ho, which was in latitude $38^{\circ} 58' N.$, and longitude $118^{\circ} 8' E.$, N. $87^{\circ} E.$, 9 miles. The southern part of the west end is very steep; in three casts we shoaled the water from where we lay at anchor with the shoal bearing N. $\frac{1}{2}$ W., in 10 fathoms, to 8, 6, and 3. This part is composed of rocks and shingle, leaving a channel for junks between it, and a line of sand extending to the eastward. The depths of water over the bank are 1, $\frac{1}{2}$, and $1\frac{1}{2}$ fathoms; some places are dry at low water, with numerous fishing stakes, and affording shelter for junks. From the west end, the shoal trends to the northward and N.N.E., about 4 miles, and then eastward, making a channel for trading junks between it and the shoal that extends from the main.

Good anchorage and smooth water were found in lat. $39^{\circ} 1'$, and $39^{\circ} 2\frac{1}{2}' N.$, in 6 fathoms, particularly during northeasterly gales, at which time vessels off the Pei-ho ride heavily.

In running for the anchorage, having sighted the southern Shaluytien, which is low and has deep water on the south side (17 fathoms $1\frac{1}{2}$ mile distant), steer due west, and do not come to the northward of lat. $38^{\circ} 54'$. You will soon shoal your water to 9, then 10, and 12 fathoms. The latter depth you will carry until the west end of the shoal is north of you. The soundings then will decrease, gradually towards the Pei-ho, to 8 and 7 fathoms, when you may either haul up for the anchorage off the latter place, or more to the northward under the lee of the west side of the shoal.

High water at 10h. 45m.; rise and fall, 10 feet; at the anchorage off the Pei-ho the flood tide sets to the northwest, and ebb to the southeast. Along the south side of the shoal, the flood follows the direction of it W.N.W., at the rate of $4\frac{1}{2}$ knots per hour at spring tides; and the ebb to the southeast at the rate of 3 knots; on the west side it sets to the northward, but not with so much velocity.

H. M. ship "Blonde" anchored off the mouth of the Pei-ho in lat. $38^{\circ} 56' N.$, long. $118^{\circ} 9' E.$, in 7 fathoms' water. The rise and fall of the tide was 7 feet.

On the 16th of August, the "Blonde" weighed for the watering-place at Tungtsze kow, in Chinese Tartary. The delineation of the coast-line in this neighborhood in the Admiralty charts appeared correct.

Bay of Tungtsze kow 衛子溝. On the 18th of Aug., we were in lat. $39^{\circ} 45' N.$, and long. $120^{\circ} 3' E.$, in 8 fathoms' water, when the towers on the Great Wall were distinctly seen, bearing from N. by W. to N., distant 5 leagues. Thence the ship steered to the eastward, having regular soundings in 11 to 16 fathoms, when, in lat. $39^{\circ} 12' N.$, and long. $120^{\circ} 24' E.$, the water suddenly shoaled to 10 fathoms; for a short period after which we had 16 fathoms, until approaching the anchorage which is $8\frac{1}{2}$ fathoms; the north point

*Bay of Changhing.**Tides in Gulf of Cheihle.**Bar in the Pei-ho.*

bearing N.N.W. $\frac{1}{4}$ W.; village, E. $\frac{3}{4}$ N.; remarkable hill, E. $\frac{1}{2}$ S.; watering-place, E. by N. $\frac{1}{2}$ N.; south point, S. $\frac{1}{4}$ W. The latitude was $39^{\circ} 30' N.$, and longitude by chronometer, $121^{\circ} 20' E.$, and by lunar observations, $121^{\circ} 16'$. Variation, $2^{\circ} 50' W.$ High water at 2h. 30m. Direction of tide, W.N.W.; rise and fall, 9 feet.

On a nearer approach to this bay, the north point appears abrupt, and is of a reddish color, sloping toward the north, and perpendicular towards the sea; it cannot well be mistaken for any other part of the coast. The bay is extensive, being 7 or 8 miles wide, and affords ample room for any number of ships; but within 2 or 3 miles inside of the point where the watering bay is, there are only $3\frac{1}{2}$ fathoms at low water, and it is prudent not to approach nearer. This is on the south side of the bay at Changhing 長興, opposite to Fuhchow 復州 on the main.

The terminus of the Great Wall is in lat. $40^{\circ} 4' N.$, long. $120^{\circ} 2' E.$, and near it is a large town called Shan-hai wei 山海衛 or the garrison of the Shan-hai kwan 山海關 the gate through the Wall, which leads into Manchuria and Corea.

Tides in the Gulf of Cheihle. At the anchorage off the Pei-ho, about 16 miles from the land, it was high water on full and change days at 4 o'clock P. M. Flood tide set to the northwestward, and ebb to the southeast. Its velocity was $1\frac{1}{2}$ knot per hour during spring tides; rise and fall about 7 feet. At Toki and the Heshan Group, the tides are very irregular. While at anchor off Toki, the stream ran 22 hours to the westward, while the water rose and fell by the shore. High water on full and change days about 8h. 30m.

The entrance of the Pei-ho is seriously injured for purposes of navigation by the bar at its mouth. When the British steamer "Madagascar" was there in 1840, she found 12 feet only at high spring tides, and managed to get over it at that time by being lightened to $11\frac{3}{4}$ ft. At low water there were only 3 or 4 feet. The largest sized junks are obliged to discharge some of their cargo before they can get up to Tientsin. When the American steam-frigate "Powhatan" lay off the mouth in 1854, lieut.-commanding Stevens, in the screw steamer "John Hancock," made a survey of the mouth, and found only 9 ft. at high water, and 3 ft. at low water. A difficulty of this nature must always prove a serious obstacle to Tientsin ever becoming a place of great foreign trade.

Winds and Currents on Coast. Currents near Bashees. Advice in going up.

The following remarks concerning the winds and currents in the Formosan Channel, are the result of a long experience, and deserve attention. The last paragraph is by Captain Thomas Rees, the others from Capt. T. B. Smith of the British ship "Wanderer."

"Winds prevail from E.N.E., chiefly until the Formosa Straits are open, when they come down N. by E., and N.N.E.; about the Bashees, NE. and E.N.E. winds prevail with a very turbulent sea; reaching to the SE., found an undeviating strong wind and heavy sea from NE., but stretching out of this to the northward along the east coast of Formosa, the wind is easterly and variable, until well to the north of that island, when we had it heavy from N.N.E.; and it may be considered a general rule, that when the wind creeps round to the south of east of it will speedily fly round with the sun to the north, and blow with redoubled fury. Heavy northwest gales sometimes blow for several days together upon this north coast, reaching far into the offing.

"Currents set strong from the east, until the Formosa Straits are open, when they usually trend down the China Sea more southerly. On approaching Formosa, found little or no current under the lee of the Pescadores. About Botel Tobago Xima, the current divides, one stream setting strong to the west through the Bashees, the other branching off to the north along the east side of Formosa. In the open sea to the north of that island, it is very mutable in direction and velocity, governed by the prevailing wind, but setting fast to the south during the strong northerly gales so often experienced in that locality.

"*General Remarks.* The passage up against the NE. monsoon involves considerable wear and tear, and is very trying to sails and spars, as it is one continued series of heavy weather—almost a constant double reef breeze with a very turbulent sea. After leaving the Bashees, the chief difficulties of the passage seem to be over.

"On departing from the Lemas, it is best to hold the coast close on board, using every legitimate means of obtaining easting, and evading the constant adverse current which here prevails, by working up in the smooth water of the safe bays by day, and if blowing hard coming to, when anchorage is attainable, until the gale is over; standing boldly to the eastward when the wind permits, and again seeking in shore, when it becomes adverse. This is the trying part of the passage, and requires a watchful perseverance.

"After passing the south point of Formosa, the passage either to the east or west of the Madjicosimah group may be adopted, according to the wind. The latter offers the advantage of a favorable current which sets with some velocity up to the north. Having advanced to the north of Formosa Head, the most favorable tack may be pursued, wind veering from north to east in the offing with an occasional gale from the NW.; it is best to avoid the land until a lead in can be made to windward of the Kewsan, where a well sheltered anchorage may be obtained under the islands.

"The barometer fails to be of much use on this coast for ordinary gales, rising very high with the prevalent northerly stormy weather. After veering round southerly, the wind sometimes comes down with sudden violence from the north, when sail should be immediately reduced, but the gales are never of long continuance."

"The wind blows for not less than nine months *down* the coast of Kwangtung province. A vessel coming out of the Lema Channel, when such is the case, ought always, if possible, to work up within about twenty miles of the shore. Repeated trials have proved the correctness of this advice; for whenever ships have stretched out far to seaward, making long tacks, they have always had to encounter so much stronger wind and more heavy sea, that their progress being wholly stayed, they have found, when again fetching the coast, that they had gained nothing."

CHAPTER II.

SAILING DIRECTIONS FOR PORTS IN JAPAN.

The following sailing directions for ships going to the newly opened ports in Lewchew and Japan, were prepared by officers in Commodore Perry's squadron in the expedition to those countries in 1853 and 1854.

Section I.

SAILING DIRECTIONS FOR NAPA, LEWCHEW.

By Lieut. Silas Bent, U. S. N.

This is the principal sea-port of the island, and perhaps the only one possessing the privileges of a port entry.

Its inner, or "Junk harbor," has a depth of water of from two to three fathoms, and though small, is sufficiently large to accommodate with ease, the fifteen or twenty moderate sized junks which are usually found moored in it. These are mostly Japanese, with a few Lewchewan and some small coasting craft, which seem to carry on a sluggish trade with the neighboring islands.

The outer harbor is protected to the eastward and southward by the main land, whilst in other directions it is surrounded by merely a chain of coral reefs, which answer as a tolerable breakwater against a swell from the northward or westward, but affords of course, no shelter from the wind. The holding-ground is so good, however, that a well found ship could ride out here almost any gale in safety.

The clearest approach to Napa from the westward, is by passing to the northward of the Amakirrima islands, and sighting Agenhu Island, from whence steer a SE. course for the harbor, passing on either side of Reef Islands, being careful, however, not to approach them too near on the western and southern sides, as the reefs below water in these directions are said to be more extensive than is shown by the charts.

After clearing Reef Islands, bring Wood Hill to bear S.S.E., when stand down for it, until getting upon the line of bearing for *South Channel*. This will carry you well clear of Blossom Reef, yet not so far off but that the White Tomb and clump of trees or bushes to the southward of Tumai Head (see View, No. 3 on chart,) can be easily distinguished. An E.N.E. $\frac{1}{2}$ E., or E.N.E. course will now take

Oar Channel into Napa. North Channel. Blossom Reef. Spar Buoys.

you in clear of all dangers, and give a good anchorage on or near the Seven Fathom Bank, about half a mile to the northward and westward of False Capstan Head. This channel being perfectly straight, is more desirable for a stranger entering the harbor, than *Oar Channel*, which, though wider, has the disadvantage of its being necessary for a vessel to alter her course some four or five points, just when she is in the midst of reefs which are nearly all below the surface of the water.

TO ENTER BY OAR CHANNEL,

Bring the centre of the island in Junk Harbor (known by the deep verdure of its vegetation), to fill the gap between the forts at the entrance of Junk Harbor (see View, No. 2 on chart,) and steer a S. E. $\frac{1}{2}$ E. course, until Capstan Head bears east, when haul up to E. N. E., and anchor as before directed.

THE NORTH CHANNEL

Is very much contracted by a range of detached rocks making out from the reef on the west side, and should not under ordinary circumstances be attempted by a stranger; as at high water the reefs are almost entirely covered, and it is difficult to judge of your exact position, unless familiar with the various localities and land marks. To enter by this (North) Channel, bring a remarkable notch in the southern range of hills, in line with a small hillock just to the eastward of False Capstan Head (see View No. 1 on chart), and stand in this range S. by E. $\frac{1}{2}$ E., until Tumai Head bears E. $\frac{1}{2}$ N., when open a little to the southward, so as to give the reef to the eastward a berth, and select your anchorage.

There is a black spar-buoy anchored on Blossom Reef *half-way between its East and Western extremities*, a red spar-buoy on the point of reef to the W. N. Westward of Abbey Point, and a white spar-buoy on the southeast extremity of Oar Reef. Flags of corresponding colors are attached to all these buoys, and they afford good guides for the South and Oar Channels. There are two large stakes on the reefs on the eastward and westward of North Channel, planted there by the natives, this being the channel mostly used by junks trading to the northward.

An abundance of water can always be obtained at the fountains in Junk River, where there is excellent landing for boats. There is a good spring near the tombs in Tumai Bluff, but unless the water is perfectly smooth the landing is impracticable; and under any circumstances it is inconvenient from the want of sufficient depth, except at high tide.

Note.—The spar-buoys above described, were securely moored at the time they were placed in their respective positions in June 1853, by order of Commodore Perry, but may be displaced, or entirely removed, by the heave of the sea, or by the natives, and should therefore not be entirely relied upon. S. BENT.

Course to Oonting. Channel into the harbor. Harbor of Simoda. Rock I.

Section 2.

OONTING OR PORT MELVILLE, LEWCHEW.

By Lieut. Wm. B. Whiting, U. S. N.

Oonting harbor is on the northwest side of Lewchew, and distant about thirty-five miles from Napa.

Sugar Loaf Island, an excellent landmark, lies about twelve miles to the W.NWestward of the entrance. The island is low and flat, with the exception of a sharp conical peak near its eastern extremity, which rises to a height of several hundred feet.

Passing to the northward of Sugar Loaf Island, an E.SEasterly course will bring you to the mouth of the harbor, and to the northward and westward of Kooi Island. It is advisable to heave to here, or anchor in twenty or twenty-five fathoms' water, until boats or buoys can be placed along the edges of the reefs bordering the channel, for without some such guides, it is difficult for a vessel of large draught to find her way in between the reefs, which contract, in places, to within a cable's length of each other, and are at all times covered with water.

The ranges and courses for the channel, are first:—Hele Rock in range with Double-topped Mountain, (see View on chart) bearing S. 37° E. Steer this course, keeping the range on until Chimney Rock bears S. $\frac{1}{4}$ E.; then for Chimney Rock, until Point Conde bears S. 49° E.; then for Point Conde, until entering the basin of Oonting, when anchor, giving your ship room to swing clear of the reef making out to the northward of Point Conde, and you will be as snug as if lying in dock, with good holding-ground, completely land-locked, and sheltered almost entirely from every wind. Good water is to be had at the village of Oonting.

Section 3.

SAILING DIRECTIONS FOR SIMODA.

By Lieut. Wm. L. Maury, U. S. N.

Vessels bound to the harbor of Simoda, from the southward and westward, should make Cape Idzu, from which Rock Island bears E.S.E. $\frac{1}{2}$ E., distant about 6 miles; and if the weather is at all clear, the chain of islands at the entrance of the Gulf of Yedo will at the same time be plainly visible. Between Rock Island and the main land, there are a number of rocks awash and above water, which the Japanese junks freely pass; but a ship should not attempt a passage inside of Rock Island, unless in case of urgent necessity, particularly as the north-easterly current, which sweeps along this coast, seems to be, at this point, capricious, both in direction and velocity.

Oho Sima. Cape Diamond. Meac Sima. Rocks in Simoda Harbor. Centre I.

Giving Rock Island a berth of a mile, the harbor of Simoda will be in full view, bearing N. $\frac{1}{2}$ W., distant five miles. Vandalia Bluff, on the east side of the entrance, may be recognized by a grove of pine trees on the summit of the bluff, and the village of Susaki, which lies about one third of the way between it and Cape Diamond. Cape Diamond is a point making out to the eastward of the entrance of the harbor. Standing in from Rock Island, you will probably pass through a number of tide rips, but not get soundings with the hand lead, until near the entrance of the harbor, when you will be in from 17 to 24 fathoms.

Should the wind be from the northward and fresh, a vessel should anchor at the mouth of the harbor, until it lulls or shifts, or until she can conveniently warp in, as it is usually flawy and always baffling.

Approaching from the northward and eastward, a vessel can pass on either side of Oho Sima, from the centre of which, Cape Diamond bears W.S.W. $\frac{3}{4}$ W., distant about twenty miles. Between Oho Sima and Simoda no dangers are known to exist, but the north-easterly current must be borne constantly in mind, particularly at night and in thick weather. Its general strength is from two to three miles per hour; but as this as well as its direction, is much influenced by the local winds, headlands, islands, &c., neither can be relied upon. Should Oho Sima be obscured by thick weather before reaching Cape Diamond, endeavor to sight Rock Island, for there are no very conspicuous objects on the main land, by which a stranger can recognize the harbor at a distance, and the shore appears as one unbroken line.

To the westward of the harbor, there are several sand beaches, and three or four sand banks. These can be plainly discerned when within six or eight miles, and are good landmarks.

A vessel from the southward and eastward should pass to the westward of the island of Meac Sima; which may be known by a remarkable snow white cliff on its western side. There is also a white patch on its summit, to the northward of the cliff. From this island the harbor bears N.N.W., distant about 25 miles.

There are but two hidden dangers in the harbor; the first is the Southampton Rock, which lies mid-channel, bearing N. $\frac{1}{2}$ W. from Vandalia Bluff, about three fourths of the way between it and Centre Island. This rock is about 25 feet in diameter, and has two fathoms' water upon it. It is marked by a white spar-buoy.

The second is the Supply Rock, bearing S. by W., a short distance from Buisako islet; it is a sharp rock with 11 feet water upon it. Its position is designated by a red spar-buoy. Both of these buoys are securely moored, and the authorities of Simoda have promised to replace them, should they by any cause be removed.

Centre Island, which receives its name from being the point from which the Treaty limits are measured, is high, conical, and covered with trees. A cave passes entirely through it.

Guides into Simoda. Ukona Rocks. Rock I. Centre I. Buoys on rocks.

In the outer roads, or mouth of the harbor, a disagreeable swell is sometimes experienced, but inside of the Southampton Rock and Centre Island, vessels are well sheltered, and the water comparatively smooth. Moor with an open hawse to the southward and westward.

There are good landings for boats in Simoda Creek, and at the village of Kakizaki. A harbor-master and three pilots have been appointed; wood, water, fish, fowls and eggs, also sweet potatoes and other vegetables, may be procured from the authorities. It is necessary to supply them with casks to bring the water off.

Latitude of Centre Island, $34^{\circ} 39' 49''$ N., long. $138^{\circ} 57' 50''$ E. Extreme rise of tide, 5 feet 7 inches; mean rise, 3 feet. Variation, $52'$ westerly. High water, full and change, *5hrs.*

To make the foregoing directions more easily comprehended, they have been rendered as concise as possible, but to furnish further information to navigators bound to, or passing the port, the following additional remarks are appended.

The harbor of Simoda is near the southeastern extremity of the peninsula of Idzu, which terminates at the cape of that name. To the northward of the harbor, a high ridge intersects the peninsula, and south of this, all the way to the Cape, it is broken by innumerable peaks of less elevation. The harbor bears SW. by W. from Cape Sagami, at the entrance of Yedo Bay, distant about 45 miles.

Rock Island is about 120 feet high, and a third of a mile long, with precipitous shores and uneven outlines. It has a thick matting of grass, weeds, moss, &c., on the top. From the summit of this island, overfalls were seen, bearing N. $\frac{1}{2}$ W., distant a mile, or a mile and a half, which may have been caused by a rock or reef. An attempt was made to find it, but the strong current and fresh wind prevented a satisfactory examination. The Japanese fishermen, however, deny the existence of any such danger. N. by W. from Rock Island, distant 2 miles, are the Ukona Rocks, though they generally appear as one. The largest is about 70 feet high. Between these and Rock Island, the current was found setting E.N.Easterly, fully four miles an hour.

Centre Island bears from Rock Island, N. $\frac{1}{2}$ E., distant $5\frac{1}{2}$ miles; and from Ukona Rocks, N. by E. $\frac{1}{2}$ E. distant $3\frac{1}{2}$ miles. Buisako islet lies N.NE. from Centre Island. It is about 40 feet high, and covered with trees and shrubs.

Should the buoys on Southampton Rock be removed, the east end of Centre Island on with the west end of Buisako, will clear the rock to the westward. Off the village of Susaki, and distant one-third of a mile from the shore, is a ledge of rocks, upon which the swell is always breaking; give them a berth of two cables in passing. Due west from Vandalia Bluff, about one-third of the way to the opposite shore, is a deep hole, with upwards of 30 fathoms water.

Shirahama. Redfield Rocks. Opening of Yedo Bay. Plymouth Rocks.

Approaching from the eastward, the harbor will not open until you get well inside of Cape Diamond. To the northward of Cape Diamond, is the bay of Shirahama, which is quite deep, and as it has also several sand beaches, it may be mistaken for Simoda; but as you approach this bay, Cape Diamond will shut in the Ukona Rocks and Rock Island to the southward; whilst in the Simoda Roads, they are visible from all points.

Cape Idzu, Latitude, $34^{\circ} 32' N.$; Long. $138^{\circ} 51' E.$

Rock Island, Latitude, $34^{\circ} 50' N.$; Long. $138^{\circ} 57' 16'' E.$

To the southward and westward of Meac Sima, there are two patches of dangerous rocks, 15 or 20 feet high, which have been named Redfield Rocks. They are in lat. $33^{\circ} 56' 13'' N.$, long. $138^{\circ} 48' 31'' E.$; and in latitude $33^{\circ} 57' 31'' N.$, longitude $138^{\circ} 49' 13'' E.$ These positions may not be strictly correct, but it is believed they are not much out of the way.

Note.—Since this survey was made, an earthquake has been experienced at Simoda (Dec. 1854), during which the bottom of the harbor was thrown up with great violence, the town overwhelmed with the surge, and perhaps some new dangers made; none, however, were discovered by the U. S. St.-F. "Powhatan," in Jan. 1855, but great caution is necessary in entering the harbor, until this survey has been revised.

Section 4.

SAILING DIRECTIONS FOR THE BAY OF YEDO.

By Lieut. Wm. L. Maury, U. S. N.

Vessels from the southward, bound to this bay, should pass up to the westward of the chain of islands lying off the Gulf of Yedo, and are cautioned against mistaking the deep bight of Kawatsu Bay for the entrance of Uraga channel; for on the NE. side of this bay, there is a ledge of rocks several miles from the shore, bearing from Cape Sagami about W.NW., distant ten miles, upon which one of the vessels of our squadron grounded. A stranger without a correct chart would naturally make this mistake, as the opening of the channel is not seen at a distance from this quarter, the shore appearing as an unbroken line.

The entrance to the channel bears from the centre of Ohio-sima, NE. by N., distant about twenty miles. Stand in upon this line, and the Saddle Hill to the northward of Cape Sagami will be readily recognized, as well as the round black knob on the eastern side of the channel. On approaching Uraga, the Plymouth Rocks will be plainly seen; give them a berth of half a mile to clear the Ingersoll Patch, a sunken rock with but one fathom on it, and which is the only known danger in the channel.

American Anchorage. Webster I. Susquehanna Bay. Yokohama Bay

Between Plymouth Rocks and Cape Kami-saki, the ground is clear, and the anchorage good, if care be taken to get pretty well in, so as to avoid the strong tides which sweep round the latter with great rapidity. A spit makes out a short distance to the southward of Kami-saki, but to the northward of the Cape the shore is bold and the water very deep.

On rounding Cape Kami-saki, if bound for the city of Yedo, steer NW. by N., until Perry Island bears S. by W. $\frac{3}{4}$ W., so as to clear Saratoga Spit, which extends well out from the eastern shore; then haul up, keeping Perry Island upon this bearing, until the beacon on the low point to the southward of Yedo, bears W.NW. This clears the shoal off the Point, and here there is good anchorage in about ten fathoms' water, in full view of the city of Yedo.

At this point our survey terminated; the boats, however, found a clear channel with plenty of water for the largest vessels several miles farther to the northward, and within a few miles of the city.

If bound to the American Anchorage, steer NW. from Cape Kami-saki, and anchor in 8 or 10 fathoms' water, with Perry Island bearing S.SE., and Webster Island SW. by S.

To the southward of Webster Island there is also good anchorage in 6 and 7 fathoms. Near this anchorage there are also two snug coves, very accessible, in which vessels may conveniently repair and refit.

Susquehanna Bay, three miles W.NW. from Cape Kami-saki, is well sheltered, but it contains a number of reefs and rocks, and is therefore not recommended as an anchorage.

Mississippi Bay is four miles north of the American Anchorage, and well sheltered from the prevailing winds. Upon anchoring it is necessary to give the shore a good berth, to avoid a shoal which extends out from a half to three quarters of a mile. The conspicuous headland, or long yellow bluff on the north side of this Bay, is called Treaty Point; a shoal surrounds the Point from two thirds of a mile to a mile distant. Between the American Anchorage and Treaty Point, the soundings are irregular, shoaling suddenly from 12 to 5 fathoms on a bank of hard sand.

To the northward of Treaty Point, and N.NW. from Cape Kami-saki, distant 14 miles, is Yokohama Bay. To reach this anchorage, bring the wooded bluff which terminates the high land on the north side of the Bay to bear N. by W. $\frac{1}{2}$ W., and steer for it until Treaty Point bears SW. by S.; this clears the spit off the Point; then haul up about NW. by N. for the bluff over the town of Kanagawa, and anchor in $5\frac{1}{2}$ or 6 fathoms, with the Haycock just open to the eastward of Mandarin Bluff. Mandarin is the steep bluff a mile to the northward of Treaty Point.

A flat extends out from the northern shore of this Bay, between Kanagawa and Beacon Point from one to two miles: off Mandarin Bluff there is also a shoal extending a mile to the northward.

Size of Yedo Bay. Treaty Point. Winds, Tides. Harbor of Hakodadi.

The Bay of Yedo is about 12 miles wide and 30 deep, with excellent holding-ground, and capable of sheltering the fleets of the world. Our survey embraced the western shore only, from Cape Kami-saki to Beacon Point. We had no opportunity of examining the eastern side. The soundings from Treaty Point across in an E.S.E. direction are regular, and 3 fathoms were found about a mile and a half from the opposite shore. A reconnaissance was made of the western shore of Uraga channel only.

During our stay in the Bay from the 17th of February to the 18th of April, the weather was generally fine, being occasionally interrupted by strong winds and heavy rain. The gales came up suddenly from the southward and westward with a low barometer, and continued for a short time, when the wind hauled round to the northward and moderated. We had no easterly blows; in fact the wind was rarely from this quarter, except when hauling round from the northward (as it invariably did) by east to the southward and westward.

The tide is quite strong out in the Bay; and off the tail of Saratoga Spit, Perry Island and Cape Kami-saki, its velocity is much increased; but at the anchorage in the Bay of Yokohama it was scarcely felt. At Yokohama the Japanese authorities supplied us with wood and water, and a few vegetables, fowls, eggs, oysters, and clams.

Latitude of Cape Sagami, $35^{\circ} 06' 30''$ N.; Longitude, $139^{\circ} 40'$ E.

Latitude of Webster Island, $35^{\circ} 18' 30''$ N.; Longitude, $139^{\circ} 40' 34''$ E.

Latitude of Treaty building, North end of Yokohama, $35^{\circ} 26' 44''$ N.; Longitude, $139^{\circ} 40' 23''$ E.

Variation, $25'$ Westerly. High water full and change, 6 hours. Rise and fall at Yokohama, 6 feet.

Section 5.

SAILING DIRECTIONS FOR HAKODADI.

By Lieut. Wm. L. Maury, U. S. N.

This spacious and beautiful bay, which for accessibility and safety is one of the finest in the world, lies on the north side of the Straits of Sangar, which separates the Japanese islands of Nippon and Yesso, and about midway between Cape Siriji-saki * (the NE. point of Nippon), and the city of Matsmai. It bears from the cape NW. $\frac{1}{2}$ W., distant about 45 miles, and is about 4 miles wide at the entrance, and 5 miles deep.

* *Saki* in the Japanese language means *cape*, consequently it should be more properly called Cape Sirija; but to prevent mistakes it has been thought advisable to adopt the entire Japanese names.

Guides into Harbor. Town. Peak of Komaga-daki. Spit near Entrance.

The harbor is the south-eastern arm of the bay, and is completely sheltered, with regular soundings and excellent holding-ground. It is formed by a bold peaked promontory standing well out from the high land of the main, with which it is connected by a low sandy isthmus, and appearing in the distance as an island, may be readily recognized. The town is situated on the north-eastern slope of this promontory, facing the harbor, and contains about 6000 inhabitants.

Approaching from the eastward, after passing Cape Suwo-kubo, named on our chart Cape Blunt, which is a conspicuous headland 12 miles E. by S. from the town, the junks at anchor in the harbor will be visible over the low isthmus.

FOR ENTERING THE HARBOR.

Rounding the promontory of Hakodadi, and giving it a berth of a mile to avoid the calms under the high land, steer for the sharp peak of Komaga-daki bearing about North, until the east peak of the Saddle, bearing about NE. by N., opens to the westward of the round knob on the side of the mountain; then haul up to the northward and eastward, keeping them open until the centre of the sand hills on the isthmus bears SE. by E. $\frac{3}{4}$ E. (these may be recognized by the dark knolls upon them). This will clear a spit which makes out from the western point of the town in a N.NWesterly direction two thirds of a mile; then bring the sand hills a point on the port bow, and stand in until the western point of the town bears SW. $\frac{1}{2}$ W., when you will have the best berth, with $5\frac{1}{2}$ or 6 fathoms' water. If it is desirable to get nearer in, haul up a little to the eastward of south for the low rocky peak, which will be just visible over the sloping ridge in the southward and eastward of the town. A vessel of moderate draught may approach within a quarter of a mile of Tsuki Point, where there is a building-yard for junks. This portion of the harbor, however, is generally crowded with vessels of this description; and unless the want of repairs, or some other cause renders a close berth necessary, it is better to remain outside.

If the Peak or Saddle is obscured by clouds or fog, after doubling the promontory, steer N. by E. $\frac{1}{2}$ E. until the sand hills are brought upon the bearing above given, when proceed as there directed. A short distance from the tail of the spit is a detached sand-bank with $3\frac{1}{2}$ fathoms on it, the outer edge of which is marked by a white spar-buoy. Between this and the spit there is a narrow channel with 5 and 6 fathoms' water. Vessels may pass either side of the buoy, but it is most prudent to go the northward of it.

Should the wind fail before reaching the harbor, there is a good anchorage in the outer roads, in from 25 to 10 fathoms.

Excellent wood and water may be procured from the authorities of the town, or if preferred, water can be easily obtained from Kamida Creek, which enters the harbor to the northward and eastward of the town.

<i>Watering-place.</i>	<i>Supplies.</i>	<i>Ingersoll's Visit to Kagosima Bay.</i>
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The season at the time of our visit was unfavorable for procuring supplies; a few sweet and Irish potatoes, eggs and fowls, however, were obtained, and these articles at a more favorable period of the year, will no doubt be furnished in sufficient quantities to supply any vessels that may in future visit the port. Our seine supplied us with fine salmon and a quantity of other fish, and the shores of the bay abound with excellent shell-fish.

During our stay in this harbor, from the 17th May to 3d June, the weather was generally pleasant until the 1st June, when the fogs set in. It was usually calm in the morning, but towards the middle of the day a breeze from SW. sprung up.

Latitude of the mouth of Kamida Creek, 41° 49' 22" N., Longitude, 140° 47' 45" E. Variation, 4° 30' W. High water, full and change, 5 hours. Extreme rise and fall of tide, 3 feet.

Our chronometers were rated at Napa, Lewchew, from the position of that place as given by Captain Beechy, R. N.

Section 6.

BAY OF KAGOSIMA.

This fine bay is situated on the southwest part of the island of Kiusiu, and forms the entrance up to the city of Kagosima, the capital of the principality of Satsuma. It is smaller than the Bay of Yedo, but equally secure, and remarkable for the beauty of its shores and scenery.* It was visited by Admiral Cecille in 1845, and has more recently been examined (Nov. 1854) by Lieut.-Com. John Rodgers U. S. N., in the U. S. S. Vincennes, who made a reconnoissance of the southern part. The following remarks were drawn up by Capt. D. Ingersoll of the American ship "Morrison," which went into this bay and that of Yedo in 1837; the first vessel in recent times to intrude on these waters; her captain has been justly commemorated by having his name given to the "Ingersoll Patch" near Goriama, by Commodore Perry; and to the "Ingersoll Rocks," mentioned in the last paragraph of this extract, by Admiral Cecille. The whole of his remarks respecting his visit to Japan will be found in the Chinese Repository, Vol. VI., page 401, &c.; the following sentences are all that are now of sufficient value to be inserted, the preceding surveys having superseded them.

"In running down the coast to Kagosima Bay, the barometer was low for some days; 29.55 was generally the blowing point; but there

* The following paragraph from Krusenstern's Voyage describes its outlines: "This bay, of which Cape Tschitschagoff forms the southeast point, and Peak Horner the northwest, had a very picturesque appearance, a number of small islands lying in irregular shapes on the northwest side of it, two of which, forming a large bow in appearance, were very remarkable. The whole bay, excepting to the north, is surrounded by high mountains, whose summits were covered with the most beautiful verdure. Peak Horner stands on a point of land, and seemed to rise out of the sea, adding very much to the picturesque appearance of the country."

<i>Entrance to Bay.</i>	<i>Soundings.</i>	<i>Volcano I.</i>	<i>Patch of Rocks.</i>
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was no bad weather, only a lack of wind. Krusenstern mentions the same circumstance. Cape D'Anville on Kiusiu, I made in latitude $131^{\circ} 19' E.$

"The entrance to Kagosima Bay cannot well be mistaken, because Kaimon-daki or Mount Horner, which forms the SW. point, is a very conical, regular mountain, from the sea to the peak. I made its longitude $130^{\circ} 32' E.$ From the south-point of Kiusiu, (or Cape Tschischagoff by the Russians,) up 16 or 18 miles, the eastern part of the bay is clear, as I went up on that side as far as the first village, which is hidden by a cliff until bearing about E.S.E. Our anchorage was on the western side, about 5 miles NE. of Mount Horner, in a small bay $\frac{3}{4}$ of a mile deep, the points bearing NE. by E. and SW. by W., about 3 miles apart; village on a kind of shelf at the bottom of the bay NW. by N. The bottom was hard, coarse black sand, like cannon powder, poor for holding. The depth 100 yards from beach 4 fathoms, deepening gradually to 18, $2\frac{1}{2}$ miles off. We anchored in 7, with the above bearings, exposed from S.S.E. to SW. by W., and from S.S.E. to E.; the land was from 10 to 12 miles distant. During our stay here, it was cloudy squally weather, so that no observations were obtained. The wind was light, except in squalls from southward, bringing in a large swell. After getting out, the ship was drifted within one mile of the NE. part of Jakunosima Island, where are 52 fathoms mud. Southerly winds prevailed on this part of the coast, probably the tail of the SW. monsoon; easterly about Yedo. Across Kagosima Bay, the soundings are 50 fathoms mud. There are about the bay several conical, perforated rocks, through which the water flows.

"I made the centre of the north part of Tanega-sima in long. $131^{\circ} 2' E.$; but was unable to determine the latitudes of most of the points mentioned: as near as I could judge, they are laid down correctly on Krusenstern's chart. Volcano Island has, running from its NE. part, a ledge or reefs, (some above the water, others awash,) that extends half the distance to St. Julie Island, which may be $2\frac{1}{2}$ miles from it to NE.; one of these looks like a junk under sail. From the SW. part of the island there is also a cluster of rocks (about 100 yards in diameter, breakers and all) about $1\frac{1}{2}$ miles distant with green water between them. In a deep ravine on the east side of Volcano Island, yellow smoke ascended from three points, enveloping its summit. Southeast from St. Clair there is a high but small haystack-shaped rock or island, about 5 miles distant; when bearing westward it forms one cock; when bearing north two.

"In latitude $30^{\circ} 50' N.$, long. $129^{\circ} 27' E.$, is a cluster of pointed high rocks or islands, not mentioned by former navigators, but being so near the track to Nagasaki, the Dutch have, probably, their true position."

CHAPTER III.

ARTICLES OF TRADE WITH CHINA.

Section 1.

TARIFF ON EXPORTS.

THE tables of duties on exports and imports in this and the next section are numbered according to the tariff of 1843; each table has five columns, which contain the duties reckoned in a different way:—

Col. 1st shows the duty in the Chinese currency of taels, mace, candareens and cash, as stated in the Chinese edition of the Tariff.

Col. 2d contains the same duties in dollars and cents, at the usual exchange of 1000 dollars for 717 taels.

Col. 3d contains the actual sums to be paid to the Chinese government in dollars and cents for duties, reckoning them in sycee at the cost price of \$1525 for 1000 taels, or about 7 per cent. premium.

Col. 4th contains the amounts in the first column reckoned in English currency, but giving the duty at so much per *cwt.* and *lb.*, where it is *pecul* and *catty* in the Chinese, except such articles as are rated by the *piece*, yard, hundred or thousand.

Col. 5th contains the amounts in the first column reckoned in French currency of francs and centimes, but giving the duty at so much per 100 kilogrammes (*i. e.* 220½ *lbs.* av. or 165½ catties), instead of per *pecul* or *catty*, except when the rate is per *piece*, yard, hundred or thousand.

ARTICLES OF EXPORT.	PER	Chinese Duties.	Duties in Spanish currency	Excha- nge of Duties in sycee	Duties per <i>cwt.</i> or <i>lb.</i> in English currency	Duties per 100 kilo- grams.
		T. M. C.	D. C.	D. C.	£. S. D.	F. C.
1 Alum.....	<i>pecul</i>	0 1 0	0.14	0.15½	0 0 6	1 26
2 Aniseed stars.....	"	0 5 0	0.70	0.76	0 2 6½	6 31
do. oil.....	"	5 0 0	6.94	7.63	1 5 2½	63 11
3 Arsenic.....	"	0 7 5	1.04	1.15	0 3 9½	9 47
4 Bangles, or glass armlets.....	"	0 5 0	0.70	0.76	0 2 6½	6 31
5 Bamboo screens and ware.....	"	0 2 0	0.28	0.31	0 1 0	2 52
6 Brass leaf.....	"	1 5 0	2.10	2.29	0 7 6½	18 93
7 Building materials.....			Free.			
8 Bone and horn ware.....	<i>pecul</i>	1 0 0	1.40	1.52½	0 5 0½	12 62
9 Camphor.....	"	1 5 0	2.10	2.29	0 7 6½	18 93
10 Canes of all kinds.....	<i>thous</i>	0 5 0	0.70	0.76	0 3 0	3 82
11 Capoor cutchery.....	<i>pecul</i>	0 3 0	0.42	0.46	0 1 10	3 79
12 Cassia.....	"	0 7 5	1.04	1.15	0 3 9½	9 47
do. buds.....	"	1 0 0	1.40	1.52½	0 5 0½	12 62
do. oil.....	"	5 0 0	6.94	7.63	1 5 2½	63 11
13 China-root.....	"	0 2 0	0.28	0.31	0 1 0	2 52
14 Chinaware of all kinds.....	"	0 5 0	0.70	0.76	0 2 6½	6 31
15 Clothes, ready made ..	"	0 5 0	0.70	0.76	0 2 6½	6 31
16 Copper, tin, and pewter-ware,	"	0 5 0	0.70	0.76	0 2 6½	6 31
17 Corals (or false coral).....	"	0 5 0	0.70	0.76	0 2 6½	6 31

ARTICLES OF EXPORT.	PER	Chinese Duties.	Duties in Spanish currency	Excha- nge of Duties in sycee.	Duties per cwt. or lb. in. English currency.	Duties per 100 kilo- grams.
		T. M. C.	D. C.	D. C.	L. S. D.	F. C.
18 Crackers and fireworks,	<i>pecul</i>	0 7 5	1.04	1.15	0 3 9 $\frac{1}{4}$	9 47
19 Cubebs,	"	1 5 0	2.10	2.29	0 7 6 $\frac{3}{4}$	18 92
20 Fans, as feather fans, &c.	"	1 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
21 Furniture of all kinds,	"	0 2 0	0.28	0.31	0 1 0	2 52
22 Galangal,	"	0 1 0	0.14	0.15 $\frac{1}{2}$	0 0 6	1 26
23 Gamboge,	"	2 0 0	2.78	3.05	0 10 1	25 35
24 Glass & glassware of all kinds	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
25 Glass beads,	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
26 Glue, fish glue, common, &c.	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
27 Grasscloth of all kinds,	"	1 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
28 Hartall (or orpiment)	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
29 Ivoryware of all kinds	"	5 0 0	6.94	7.63	1 5 2 $\frac{1}{2}$	63 11
30 Kittysols, or paper umbrellas.	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
31 Lackered-ware of all kinds,	"	1 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
32 Lead, white,	"	0 2 5	0.35	0.38	0 1 3	3 16
33 Lead, red,	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
34 Marble slabs,	"	0 2 0	0.28	0.31	0 1 0	2 52
35 Mats, straw, rattan, bamboo, &c.	"	0 2 0	0.28	0.31	0 1 0	2 52
36 Mother-o'-pearl ware,	"	1 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
37 Musk,	<i>catty</i>	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	62 86
38 Nankeens, cotton cloths and coarse Canton nankeens,	<i>pecul</i>	1 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
39 Pictures, viz., large oil painting, rice or pith-paper,	<i>each</i>	0 1 0	0.14	0.15 $\frac{1}{2}$	0 0 6	0 76
40 Paper fans,	<i>hund</i>	0 1 0	0.14	0.15 $\frac{1}{2}$	0 0 6	0 76
41 Paper of all kinds,	<i>pecul</i>	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
42 Pearls (<i>i. e.</i> false pearls),	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
43 Preserves and sweetmeats,	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
44 Rattan work of all kinds,	"	0 2 0	0.28	0.31	0 1 0	2 52
45 Rhubarb,	"	1 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
46 Silk, raw, Nanking or Canton sorts,	"	10 0 0	13.89	15.25	2 10 4 $\frac{3}{4}$	126 22
Silk, raw, coarse or refuse,	"	2 5 0	3.47	3.81	0 13 7 $\frac{1}{4}$	31 78
Silk organzine, silk ribbons and silk thread of all kinds,	"	10 0 0	13.89	15.25	2 10 4 $\frac{3}{4}$	126 22
Silk piece-goods,	"	12 0 0	16.67	18.30	3 0 5 $\frac{3}{4}$	151 57
47 Silk and cotton mixtures, silk and woollen mixtures, and goods of such class,	"	3 0 0	4.17	4.58	0 15 1 $\frac{1}{2}$	37 87
48 Shoes and boots of all kinds,	"	0 2 0	0.28	0.31	0 1 0	2 52
49 Sandalwood ware,	"	1 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
50 Soy,	"	0 4 0	0.56	0.61	0 2 0 $\frac{1}{4}$	5 05
51 Silver ware and gold ware,	"	10 0 0	13.89	15.25	2 10 4 $\frac{3}{4}$	126 22
52 Sugar, raw, white and brown,	"	0 2 5	0.35	0.38	0 1 3	3 16
53 Sugar-candy of all kinds,	"	0 3 5	0.49	0.54	0 1 9 $\frac{1}{4}$	4 42
54 Tin foil,	"	0 5 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
55 Tea of all descriptions,	"	2 5 0	3.47	3.81	0 12 7 $\frac{1}{4}$	31 78
56 Tobacco of all kinds,	"	0 2 0	0.28	0.31	0 1 0	2 52
57 Turmeric,	"	0 2 0	0.28	0.31	0 1 0	2 52
58 Tortoise-shell ware,	"	10 0 0	13.89	15.25	2 10 4 $\frac{3}{4}$	126 22
59 Trunks of leather,	"	0 2 0	0.28	0.31	0 1 0	2 52
60 Treasure (<i>i. e.</i> foreign coin),	"	Free				
61 Vermilion,	<i>pecul</i>	3 0 0	4.17	4.58	0 15 1 $\frac{1}{2}$	37 86
Articles unenumerated in this tariff,		Five per	cent.	ad val	orem.	

Section 2.

TARIFF ON IMPORTS.

ARTICLES OF IMPORT.	PER	Chinese Duties.	Duties in Spanish currency	Excha- nge of Duties in sycee	Duties per cwt. or lb. in English currency	Duties per 100 kilo- grams.
		T. M. C. C.	D. C.	D. C.	£ S. D.	F. C.
1 Asafoetida,	<i>pecul</i>	1 0 0 0	1.40	1.52½	0 5 0½	12 62
2 Beeswax,	"	1 0 0 0	1.40	1.52½	0 5 0½	12 62
3 Betel nut,	"	0 1 5 0	0.21	0.23	0 0 9	1 89
4 Bicho-de-mar, 1st sort, or black, do. 2d sort, or white,	"	0 8 0 0	1 12	1.22	0 4 0½	10 10
5 Birds-nests, 1st sort or cleaned, do. 2d sort, or good middling, do. 3d sort, or uncleaned,	"	5 0 0 0	6 94	7.63	1 5 2½	63 11
6 Camphor, (Baroos) 1st quality, or clean,	<i>catty</i>	2 5 0 0	3.47	3.81	0 12 7½	31 78
do. 2d quality, or refuse,	"	0 5 0 0	0.70	0.76	0 2 6½	6 31
7 Cloves, 1st quality, or picked do. 2d or mother cloves	<i>pecul</i>	1 5 0 0	2.10	2.29	0 7 6½	18 92
8 Clocks, watches, telescopes, glassware, writing-desks, dressing-cases, jewelry, cut- lery, hardware, &c., &c.	"	0 5 0 0	0.70	0.76	0 2 6½	6 31
9 Canvas, of 29 @ 39 yds. by 24 @ 31 inches wide	<i>bolt</i>	5 per cent.	ad val	orem.		
10 Cochineal,	<i>pecul</i>	0 5 0 0	0.70	0.76	0 3 0	3 82
11 Cornelians, 100 stones estimat- ed at 6 catties 4 taels	<i>hund</i>	5 0 0 0	6.94	7.63	1 5 2½	63 11
Cornelian beads,	<i>pecul</i>	0 5 0 0	0.70	0.76	0 3 0	3 82
12 Cotton, raw, allowing 5 per cent. for tare	"	10 0 0 0	13.89	15.25	2 10 4½	126 22
13 Cotton Manufactures, viz:— Longcloths, or white shirt- ings, 29 @ 39 yds. by 31 @ 37 ins.	<i>piece</i>	0 4 0 0	0.56	0.61	0 2 0½	5 05
Longcloths, gray or unbleach- ed, American domestics, 29 @ 39 yds. by 28 @ 41 ins.	"	0 1 5 0	0.21	0.23	0 0 10½	1 16
Twilled cloth or drillings, white or gray.	"	0 1 0 0	0.14	0.15½	0 0 7½	0 77
Cambrics and muslins, 19½ @ 23½ yards by 41 @ 46 ins.	"	0 1 0 0	0.14	0.15½	0 0 7½	0 77
Chintz and prints, 24 @ 28 yds. by 41 @ 46 ins.	"	0 1 5 0	0.21	0.23	0 0 10½	1 16
Hdkfs., large, over 36½ ins.	<i>each</i>	0 2 0 0	0.28	0.31	0 1 0	1 54
do. small, under 36½ ins.	"	0 0 1 5	0.02½	doz. 23	0 0 1	0 12
Ginghams, pulicates, dyed cottons, velveteens, silk & cotton mixtures, linen & cotton mixtures, and all kinds of fancy goods,	"	0 0 1 0	0.01½	doz. 18½	0 0 0½	0 08
14 Cotton yarn, & cotton thread,	<i>pecul</i>	5 per cent.	ad val	orem.		
15 Cow Bezoar,	<i>catty</i>	1 0 0 0	1.40	1.52½	0 5 0½	12 62
16 Cutch,	<i>pecul</i>	1 0 0 0	1.40	1.52½	0 5 0½	124 73
		0 3 0 0	0.42	0.46	0 1 6½	3 79

ARTICLES OF IMPORT.	PER	Chinese	Duties	Exchange	Duties	Duties
		Duties.	in	of	per cwt.	per 100
		T.M.C.C.	D. C.	D. C.	or lb. in	kilo-
					English	grams.
					currency	
					£ s. d.	F. c.
17 Elephants' Teeth, viz.						
1st quality, whole,	pecul	4 0 0 0	5.55	6.10	1 0 2	50 71
do. 2d quality, broken,	"	2 0 0 0	2.78	3.05	0 10 1	25 35
18 Fishmaws,	"	1 5 0 0	2.10	2.29	0 7 6 $\frac{3}{4}$	18 92
19 Flints,	"	0 0 5 0	0.07	0.08	0 0 3	0 64
20 Glass, glassware, and crystal ware,		5 per cent.		ad val	orem.	
21 Gambier,	pecul	0 1 5 0	0.21	0.23	0 0 9	1 89
22 Ginseng, 1st quality,	"	38 0 0 0	52.77	average 15.86	9 11 7	average 131 15
do. 2d quality, or refuse,	"	3 5 0 0	4.86		0 17 7 $\frac{3}{4}$	
Note Of every hundred catties of foreign ginseng of whatever sort, one fifth part is to be considered of superior quality, and four fifths of inferior quality.						
23 Gold and silver thread, viz :						
1st quality, or real,	catty	0 1 3 0	0.18	0.20	0 0 7 $\frac{1}{2}$	15 68
do. 2d quality, or imitation	"	0 0 3 0	0.04	0.04 $\frac{1}{2}$	0 0 1 $\frac{1}{2}$	3 79
24 Gums: Benjamin or benzoin,	pecul	1 0 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
Olibanum,	"	0 5 0 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
Myrrh,	"	0 5 0 0	0.70	0.76	0 2 6 $\frac{1}{4}$	6 31
Gums unenumerated,		10 per cent.		ad val	orem.	
25 Horns, buffalo and bullocks',	pecul	2 0 0 0	2.78	3.05	0 10 1	25 35
26 Horns, unicorn or rhinoceros'	"	3 0 0 0	4 17	4.58	0 15 1 $\frac{1}{2}$	37 87
27 Linen, fine, 20 @ 30 yards by 27 @ 31 ins.	piece	0 5 0 0	0.70	0.76	0 3 0	3 72
Linen, coarse, or linen and cotton mixtures, silk and linen mixtures, &c.,		5 per cent.		ad val	orem.	
28 Mace, or flower of nutmeg, ..	pecul	1 0 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
29 Mother-o'-pearl shells,	"	0 2 0 0	0.28	0.31	0 1 0	2 52
30 Metals, viz :—						
Copper, unmanufactured, as in slabs, pigs &c.,	"	1 0 0 0	1.40	1.52	0 5 0 $\frac{1}{2}$	12 62
Copper, manufactured as in sheets, rods, &c.,	"	1 5 0 0	2.10	2.29	0 7 6 $\frac{3}{4}$	6 31
Iron, unmanufact'd as in pigs, do. manufactured, as in hoops, bars, rods,	"	0 1 0 0	0.14	0.15 $\frac{1}{4}$	0 0 6	1 26
Lead, in pigs or manufactured	"	0 1 5 0	0.21	0.23	0 0 9	1 90
Spelter,	"	0 2 8 0	0.30	0.43	0 1 5	3 47
Tin,	"	0 4 0 0	0.56	0.61	0 2 0 $\frac{1}{4}$	5 05
Tin plates,	"	1 0 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
Quicksilver	"	0 4 0 0	0.56	box .48	0 2 0 $\frac{1}{4}$	5 05
Steel, unmanufactured, English or Swedish,	"	3 0 0 0	4.17	4.68	0 15 1 $\frac{1}{2}$	38 20
Unenumerated metals,		5 per cent.		tab. .48	0 2 0 $\frac{1}{4}$	5 05
31 Nutmegs, 1st sort, or cleaned,	pecul	2 0 0 0	2.78	3.05	0 10 1	25 35
do. 2d sort, or uncleaned,	"	1 0 0 0	1.40	1.52 $\frac{1}{2}$	0 5 0 $\frac{1}{2}$	12 62
32 Pepper, (Malay)	"	0 4 0 0	0.56	0.61	0 2 0 $\frac{1}{4}$	5 05
33 Putchuck,	"	0 7 5 0	1.04	1.15	0 3 9 $\frac{1}{4}$	9 47
34 Rattans,	"	0 2 0 0	0.23	0.31	0 1 0	2 52

ARTICLES OF IMPORT.	PER	Chinese Duties.	Duties in Spanish currency	Excha nge of Duties in sycee	Duties per cwt. or lb. in English currency	Duties per 100 kilo- grams.
		T.M.C.C.	D. C.	D. C.	£ S. D.	F. C.
35 Rice, paddy, and grain of all kinds, .....	.....	Free.				
36 Rose Maloes, oil of,	<i>pecul</i>	1 0 0 0	1.40	1.52½	0 5 0½	12 62
37 Saltpetre; sold only to govern- ment,	"	0 3 0 0	0.42	0.46	0 1 6½	3 79
38 Shark's fins, 1st sort, or white, do. 2d sort, black, ..	"	1 0 0 0	1.40	1.52½	1 5 0½	12 62
39 Skins and furs, viz: Cow and ox hides, tanned or untanned,	"	0 5 0 0	0.70	0.76	0 2 6½	6 31
Sea otter skins,	<i>each</i>	1 5 0 0	2.10	2.29	0 9 1	11 13
Fox skins, large	"	0 1 5 0	0.21	0.23	0 0 10½	1 12
do. small,	"	0 0 7 5	0.10	0.11½	0 0 5½	0 57
Tiger, leopard, marten skins.	"	0 1 5 0	0.21	0.23	0 0 10½	1 12
Land otter, raccoon, shark's	<i>hund</i>	2 0 0 0	2.78	3.05	0 12 0	14 81
Beaver skins,	"	5 0 0 0	6.94	7 63	1 5 0	37 25
Hare, rabbit, ermine,	"	0 5 0 0	0.70	0.76	0 3 0	3 72
40 Smalts,	<i>pecul</i>	4 0 0 0	5.55	6.10	1 0 2	59 71
41 Soap, perfumed soap,	"	0 5 0 0	0.70	0.76	0 2 6½	6 31
42 Stockfish, &c.,	"	0 4 0 0	0.56	0.61	0 2 0½	5 05
43 Seahorse teeth,	"	2 0 0 0	2.78	3.05	0 10 1	25 35
44 Treasure & specie of all kinds, .....	.....	Free.				
45 Wine, beer, spirits, viz.						
do. do. in quart bottles,	<i>hund</i>	1 0 0 0	1.40	doz. 18½	0 6 0	7 45
do. do. in pint bottles,	"	0 5 0 0	0.70	doz. 09	0 3 0	3 72
do. do. in casks,	<i>pecul</i>	0 5 0 0	0.70	0.76	0 2 6½	6 31
46 Woods, viz: Ebony,	"	0 1 5 0	0.21	0.23	0 0 9	1 90
Sandal-wood,	"	0 5 0 0	0.70	0.76	0 2 6½	6 31
Sapan-wood,	"	0 1 0 0	0.14	0.15½	0 0 6	1 26
Unenumerated woods,	10 per	cent.	ad val	orem.		
47 Woolen manufactures, viz: Blankets of all kinds,	<i>each</i>	0 1 0 0	0.14	0.31*	0 0 7½	0 76
Broadcloths, Spanish stripes, habit-cloths, &c., per 141 ins.	<i>chang</i>	0 1 5 0	0.21	0.06†	0 0 11	1 15
Long ells, cassimeres, narrow woolens, flannel, &c.,	"	0 0 7 0	0.09‡	0.66§	0 0 5½	0 53
Dutch Camlets,	"	0 1 5 0	0.21	2.3-||	0 0 11	1 15
English Camlets,	"	0 0 7 0	0.09‡	1.50§	0 0 5½	0 53
Imitation camlets, bombazetts	"	0 0 3 5	0.05	0.75§	0 0 2½	0 26
Bunting (narrow)	"	0 0 1 5	0.02	0.33§	0 0 1½	0 12
Unenumerated woolen goods, silk and woolen, cotton and woolen mixtures,	5 per	cent.	ad val	orem.		
48 Woolen Yarn,	<i>pecul</i>	3 0 0 0	4.17	4.63	0 15 1½	37 87
Articles unenumerated in the tariff.	5 per	cent.	ad val	orem.		
CONTRABAND.						
Opium.						

* This is reckoning blankets by the pair.

† By the yard

‡ By the piece of 24 yards.

|| By the piece of 40 yards.

§ Each of these three kinds are reckoned by the piece of 55 yards.

Dues on ships. Mode of reckoning sycee when paying duties. Agar-agar.

SHIPPING DUES.

	T	M	C	D	C
On vessels of the burthen of 150 tons and more, according to the registered statement	per ton	0	5	0	.076
On vessels of less burthen than 150 tons, according to the registered statement.	"	0	1	0	.0154
On vessels bringing a cargo of rice without other goods, and taking in cargo outwards.	"	0	2	5	.039
On vessels arriving with a cargo of rice, without other goods, or with ballast, and going away again in ballast.....	None.				

PILOTAGE

Inwards	per registered ton	\$0.05
Outwards	" "	0.05

Note.—The duties when paid in pure sycee silver, as stated in the third column of figures, vary somewhat according to the premium on sycee; the average cost-price of \$1525 for 1000 taels, or about 7 per cent. premium, has been taken, according to the following calculation:—

	T	M	C	C		T	M	C	C		
Duty to be paid	1000	0	0	0	.....	1000	0	0	0		
Difference of scales		3	3	5	0	.....		3	3	5	0
Melting, &c.....		12	0	3	0	.....		12	0	3	0
	1015	3	8	0	.....	1015	3	8	0		
Premium 5 per cent.....		50	7	6	9	Prem. 10 per cent....		101	5	3	8
	1066	1	4	9	.....	1116	9	1	8		
At 717 taels per \$1000	\$1486.96				At 717 tds. per \$1000	\$1557.77					
Average of these two calculations, \$1522.36 per 1000 taels.											

Section 3.

DESCRIPTION OF ARTICLES OF IMPORT INTO CHINA.

This section is not intended to include a description of the numerous articles of use or luxury, as flour, stationery, coal, garments, &c., &c., which are brought to China chiefly for the consumption of foreigners, although many of them may be taken by the natives to a limited extent. The numbers attached to some of the paragraphs are those they bear in the tariff on the three preceding pages. The Chinese names are those the articles bear in the tariff, and their pronunciation is uniformly given in the court dialect.

AGAR-AGAR, 石花菜 *shih huá tsái*, or 海菜 *hái tsái*. This is the Malay name for the glutinous jelly made chiefly from a marine fucus (*Gigartina tenax*); it is brought from the Archipelago, as well as made here from other species of seaweed, and is applied to many useful purposes. The bamboo frame-work of lanterns is covered with paper saturated with this gum, which when dried, is semi-

*Amber, real and false.**Ambergris and its tests.**Arrack.*

transparent; it is also used in the paper and silk manufactures. It is incomparable as a paste; and is not liable to be eaten by insects. Between 400 and 500 peculs are imported annually, mostly in native vessels and at various ports, at a prime cost of \$1½ to \$2 per pecul. Its cheapness and admirable qualities as a paste, render it worthy the attention of other countries. It is sometimes cooked for food by the Chinese.

AMBER, called 琥珀 *hú peh*; false amber, 假琥珀 *kiá hú peh*. This fossil is found on the shores of several islands of the Indian Archipelago, and in some small quantities on the coasts of China and Annam. A considerable part comes from the eastern shores of Africa. It was formerly much prized for ornaments and incense, and in China for court beads; but other substances, cheaper and more odoriferous, have superseded its use as a perfume. Transparent pieces of a lively yellowish-brown color are the best, and if insects are embedded in it, the value is greatly increased; if the pieces are foul and opaque, they are almost valueless. The price varies from \$8 to \$14 per catty, according to the quality and size of the pieces, the finest being carved into beads. False amber is brought from India, and sold in Canton at prices almost as great as those which the genuine article bears.

AMBERGRIS. This resembles amber somewhat in appearance, and is used for nearly the same purposes. Ambergris is a substance caused by disease in the intestines of the spermaceti whale; 362 ounces have been taken from the body of a single whale. Most of it, however, is picked up after strong winds, on the shores of the numerous islands in the Indian and Pacific oceans. Good ambergris is a solid, opaque, ash-colored or marbled, fatty, inflammable substance, with little black spots within, much lighter, but somewhat resembling wax, and gives off an agreeable, fragrant odor when heated. The Chinese test its goodness by throwing some of it, scraped very fine, into boiling hot tea, where, if pure, it will diffuse itself equally through the fluid. It has little taste or smell when cold, but when handled emits a fragrant odor. It swims on water. The pure white, which is apparently smooth and homogeneous, should be rejected, as it is commonly factitious.

ARRACK, called 亞歷酒 *á-lih tsiu*, from the Malay name. This spirituous liquor is distilled from different substances in the several countries where it is manufactured; on which account that made at different places varies much in strength and taste; the three principal kinds are made in Batavia, Goa, and Colombo. That from the former place is the strongest, and is distilled from a mixture of 62 parts of molasses, 3 of toddy or palm wine, and 35 of rice. The process of making it so much resembles that for distilling samshoo, that the two have scarcely any perceptible differences in taste or effects. For arrack, the rice is first boiled, and after cooling, a quantity of yeast cakes are added, and the whole pressed into baskets, in which condition it is placed over tubs, and left for eight days; the

Arrack.	Asafætida, and its uses.	Bark.	Beeswax.	Betel-nut.
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liquor which flows off is distilled, and then mixed with the molasses and toddy, and all left to ferment for a week in large vats; after the fermentation is over, the arrack is distilled one, two, or three times, according to the strength required. When pure, this spirit is like whiskey in taste and color, and produces the disease and distress among the natives which ardent spirits everywhere cause; its intoxicating qualities are often increased by the infusion of other substances, as cubebs, hemp-seed, &c. Very little is brought to China, and altogether in junks. The arrack produced at Goa is sweeter than that which comes from Java, being made by repeated distillation from toddy, and is preferred by the Hindús to the Batavian on that account.

1. ASAFÆTIDA, called 阿魏 *o wei*. This is the concrete juice of the *Ferula asafætida* and *Persica*, two trees which grow in Persia. To obtain it, the roots, after the earth is removed, are covered with leaves to defend them from the sun; they are then cut off transversely, and the thick milky juice exudes and thickens on the wound; this when hard is scraped off and another section made, and the operation repeated until the root is exhausted of juice. The gum is nauseous and bitter, and as it grows old loses its efficacy. The masses are composed of grains, of a variegated color; the best color is a pale-red, having the grains nearly white; the odor should be penetrating, and when the piece is broken, the fracture ought to bear a marbled appearance. It is brought from Bombay, and sometimes in native vessels, and ranks high in the materia medica of the Chinese physician; it is exhibited in cholera, in syphilitic complaints and worms.

BARK or *shú pí*, 樹皮 is brought to Canton for dyeing from Siam and the Archipelago; the greater part consists of sapan bark to dye red. Mangrove bark has been introduced to some extent for dyeing leather.

2. BEESWAX called 洋臘 *yáng lāh* or 蜜臘 *miēh lāh*; 磚臘 *chuen lāh*, or wax tiles, is the name for the large cakes. This article is brought from the Indian Archipelago, though the Chinese also collect it themselves. In the islands where the bees are found, the the wax in the forests, disregarding the honey, which is little in natives collect quantity and worthless. The islands of Timor and Timorlaut afford beeswax in sufficient quantity to form an important article of export; the Portuguese formerly sent away 20,000 peculs annually to China and India, at a prime cost of \$5 per pecul; Chinese traders took it from Macao. Wax is also brought from Borneo to Singapore for Chinese consumption. It is employed to some extent to incase the soft tallow in large candles, but nearly all that comes to Canton is used in making envelopes for pills, to conserve their ingredients.

3. BETEL-NUT or 檳榔 *pín lāng*, a word in imitation of the Malayan *pinang*; the leaf is called 蒟葉 *lau yeh*. The leaf of the

Preparation of Betel-nut. Pepper leaf. Extensive use as a masticatory.

betel pepper (*Piper betle*), and the nut of the areca palm (*Areca catechu*), together constitute this article, improperly called *betel-nut*, which is used as a masticatory so universally throughout the East. But as an article of commerce, the nut is always sold separately, under the name of 'betel-nut,' so called because always used with the leaf of the betel pepper.

The habit of chewing this preparation has extended from the islands, where the palm grows, to the continent of Asia, and it is now used from the Red Sea to the Pacific Ocean. The areca nut is the fruit of a slender, graceful palm, about six inches in diameter and thirty feet in height. The tree produces fruit from the age of five to twenty-five years. The nut, when the husk is taken off, resembles a nutmeg in shape and color, but is a little larger and harder. The annual produce of a tree averages fourteen pounds; and the cultivator can sell it at about half a dollar a pecul. The betel pepper is the vine which furnishes the leaf, and for which alone it is grown. The flavor of the raw leaf is herbaceous, with an aromatic, slightly pungent taste. It requires a rich soil where there is abundance of water, and it is thought that the tree on which it is supported, affects the quality and quantity of the produce. The leaf is cultivated throughout the south of Kwángtung, that from the district of Háifung bearing the highest reputation. The masticatory is prepared for use here in the same manner as in the Islands, except that the Chinese usually color their lime red.

When used, the nut is cut into thin slices, and wrapped in the raw fresh pepper leaves, adding a dab of shell lime, enough to give them a flavor. All classes of people among the Islanders, male and female, are in the habit of chewing it. "It sweetens the breath," so say those who use it, "rectifies and strengthens the stomach, and preserves the teeth;" it also gives the teeth, lips, and gums a dark red color, which is esteemed among the Malays a mark of beauty in proportion to its darkness. There is perhaps less objection against its use than that of tobacco as a general masticatory; its narcotic properties are not so great, and the taste is more pleasant. Persons of rank carry it prepared for use in splendid cases, suspended from their girdles, and a present of one of them is regarded as a mark of friendship. Among some of the inhabitants of the Indian Archipelago, to refuse, on meeting a friend, to accept the betel-nut is regarded as a serious offense. So interwoven into their ideas has the practice become, that figures of beauty are taken from it, and a face is not accounted comely, unless the mouth be stained of a dirty red round the outside of the lips. The Chinese dislike this coloring, and take pains to keep the teeth white.

The nuts, when prepared, are of two sorts, the boiled and the raw; the one is the nut alone, the other the nut cut into slices and boiled with a small quantity of cutch and then dried. Another method of curing is to split and dry them hastily over a fire, or to dry them slowly without splitting. The entire nuts, with or without the husk,

*Bicho-da-mar and its varieties.**Birds-nests, their nature and collection.*

are imported into China from Java, Singapore, Siam, and Penang. The tree also grows in Hainan, and large quantities find their way thence into the country. Betel nut is not so extensively used in the south of China as in the Archipelago; and in the north it is rather a luxury, and chewed without the leaf.

4. BICHO-DA-MAR, *biche-de-mer*, or tripang, called *hái shin* 海參 or sea-ginseng. The superior is known as white, and the inferior as black bicho-de-mar, being at least two (and perhaps more) distinct species of *Holothuria*. This marine slug forms one of the most important articles of commerce between the islands of the Indian Archipelago and China. It is found on all the islands from New Holland to Sumatra, and also on most of those in the Pacific, in the greatest abundance on small coral islands, especially those to the south and east of the Sülü group. Macassar and Manila are entrepôts, but the foreign importation is chiefly in small vessels which collect it from the natives. It is an ill looking fish, not unlike a big sausage, and has but few powers of locomotion in common with other *gasteropoda*; when the animal is captured, the short tentaculæ are folded up under its body. It is sometimes two feet long; but commonly from four to ten inches, and its girth two or three. It is taken with the hand by the natives, who spear or dive for it; and after it has been cleansed, dried, and smoked, it is fit for sale; about a thousand slugs make a pecul. For a long time the Chinese were the sole carriers of the article; but since the beginning of the century, foreigners have been engaged in the trade. In the market, bicho-da-mar appears hard and rigid, and has a dirty brown color caused by the smoking; when brought to the table it resembles pork-rind in color and consistency. The Chinese cook it by itself, or with other dishes, and consume large quantities under the belief that it is an aphrodisiac. They divide it into about 30 varieties, priced from \$80 to \$1½ per pecul, but one must be well acquainted with the article to distinguish them.

5. BIRDS-NESTS, called *yen wo*, 燕窩 or swallow's nests, are assorted into the *kwán yen* 官燕 *i. e.* mandarin nests, *cháng yen* 常燕 or common nests, and the *máu yen* 毛燕 or hairy nests, otherwise known as clean, ordinary, and uncleaned. These, which owe their celebrity only to the whimsical luxury of the Chinese, are brought principally from Java and Sumatra; though they are found on most of the rocky islets of the Indian Archipelago. The nest is the habitation of a small swallow (*Hirundo esculenta*), and is entirely composed of a gelatinous substance elaborated by the bird from a species of seaweed (*Gelidium*) like carrageen moss, which it collects on the beach; externally, the nests resemble ill-concocted, fibrous isinglass, and are of a white color, inclining to red; their thickness is little more than that of a silver spoon, and their weight from a quarter to half an ounce. When dry, they are brittle and wrinkled; the size is rather larger than a goose-egg; the dry, white, and clean

*Birds-nests difficult to procure.**Their preparation, sorts, and amount.*

are the most valuable. They are packed in bundles, with split rattans run through them to preserve their shape.

The quality of the nests varies according to the situation and extent of the caves, and the time at which they are taken. The best specimens are procured before the young are fledged; if they contain eggs only, they are still valuable; but if the young are still in the nests or have left them, the whole are then nearly worthless, being dark colored, streaked with blood, and intermixed with feathers and dirt. The nests are procurable twice every year, nor is the harvest increased if the caves are neglected a year or two; some of the rajahs keep guards constantly stationed near the caves to prevent intruders entering them. The best are found in deep, damp caves, which if not injured will continue to produce indefinitely. It was once thought that the localities near the sea-coast were the most productive; but some of the most profitable yet found, are situated fifty miles in the interior.

The method of procuring these nests somewhat resembles that of catching birds on the Orkney Isles. Some of the caves are so precipitous, that no one, but those accustomed to the employment from their youth, can obtain the nests; 'being only approachable,' says Crawford, 'by a perpendicular descent of many hundred feet, by ladders of bamboo and rattan, over a sea rolling violently against the rocks. When the mouth of the cave is attained, the perilous task of taking the nests must often be performed by torch-light, by penetrating into recesses of the rock, where the slightest slip would be instantly fatal to the adventurers, who see nothing below them but the turbulent surf making its way into the chasms of the rock.'

After they are obtained, they are separated from feathers and dirt, are carefully dried out of the sun and packed, and are then ready for the consumer. The Chinese, who are the only people that purchase them for their own use, bring them in junks to this market, where they command extravagant prices. The best, or white kind, often being worth \$3800 per pecul, which is nearly twice its weight in silver; the middling kind is worth from \$1200 to \$1600; and the worst, or those procured after fledging, \$150 or \$200 per pecul; it is according to these three qualities, that the duty is levied. A large part of the best kind is sent to Peking for the use of the court. It appears, therefore, that this curious dish is an article of expensive luxury among the Chinese only; how they acquired the habit of using it is only less singular than their persevering in it. They consider the birds-nest soup as a great stimulant and tonic, but its best quality, perhaps, is its being perfectly harmless. Not a little labor is bestowed to render it fit for the table; every feather, stick, and impurity of any kind, is carefully removed by forceps and knives; and then, after being washed it is stewed into a soft jelly, like isinglass, which owes its taste almost wholly to the ingredients added to the dish. The sale of birds-nests is a monopoly with all the governments in whose dominions it is found. It is estimated by

Baroos Camphor ; its properties and origin.

Cardamoms are of two sorts.

Crawford thirty years ago, that about 243,000 pounds, at the value of \$1,263,570, were annually sent away from the Archipelago, most of which came to China. Java alone sent about 27,000 *lbs.*, mostly of the first quality, estimated at \$60,000. The most of the trade has been and still is in the hands of the Chinese and Portuguese ; no satisfactory data for the amount or value of the importation at present can therefore be ascertained.

6. CAMPHOR, called *ping pien*, 冰片 or icicle flakes, is divided into clean or Malay, 清冰片 *tsing ping pien*, and 坭冰片 *ní ping pien*, or refuse ; other names are 龍腦 *lung náu*, or dragon's brains, and 波羅香 *po-lo hiáng*, or Borneo perfume. This sort of camphor comes from Sumatra and Borneo, where the tree is confined to a small extent of country. In Sumatra, the best gum is obtained in the district of Baroos, and hence all similarly good, brought from those two islands, is called Baroos camphor. The tree (*Dryobalanops camphora*) is a splendid tall plant, often five feet in diameter, and found nowhere else in the world. The natives cut down the trees in the forests, split them open, and scrape the gum from the fragments in small pieces. It is said that not a tenth of the trees yield gum, and before killing them it cannot be ascertained whether they are productive or not. It is divided into three sorts ; the best is in crystallized lumps of a roseate white, occurring in the fissures of the tree as a concrete essential oil ; the second is somewhat brownish, with but few sticks in it ; while the last and worst is the refuse scrapings. All sorts are brought to China. The proportion between the prices of Malay and Chinese camphor is as 100 to 1 for the best ; the former is more fragrant and not so pungent as the latter, but it is altogether the fancy of the Chinese which causes the difference ; and the high price they willingly pay for this curious production is a remarkable instance of the cost men will go to when they believe a thing will cure their ailments. It is a trifling article of trade, and most of it is smuggled.

CARDAMOMS, *peh tau kau* 白荳蔻 *i. e.* white nutmegs. There are several sorts of these, produced by various plants in different countries, but the lesser and greater are the principal. The lesser cardamoms are obtained from a small shrub (*Amomum repens*) which grows on the coast of Malabar. They are the capsules of the plant, of a bright yellow color, a pungent smell, and when good are plump and broken with difficulty, possessing a sweet aromatic flavor ; and the seeds when chewed impart a grateful warmth to the mouth. They should be well dried. The greater cardamoms are the fruits of the *Amomum cardamomum*, a tree which grows in Cochinchina, Sumatra and Java. The seeds are blackish, triangular, and longer and larger than those of the other kind, inferior in pungency and flavor. Both are occasionally used as an expectorant among the Chinese, who chew them. As an article of trade, cardamoms are hardly known in this market.

Cloves, growth and cure. Mother Cloves, the fruit. Clocks, Jewelry, &c.

7. CLOVES, 丁香 *ting hiáng*, or 子丁香 *tsz' ting hiáng*. These are the unopened flowers of a large tree (*Caryophyllu: aromaticus*), which grows in the Moluccas Islands, and is cultivated in Sumatra and Mauritius. The tree is shaped like the pear tree, the bark is smooth, and the whole plant has a strong aromatic odor. When an exotic, the tree does not begin to bear till 9 or 10 years of age, but in its native soil, it is usually productive at 5 or 6 years. The buds appear about the first of May, and during the four following months are perfected: they are green at first, then yellow, and finally change to a blood-red color; soon after this the flowers open, and in three weeks the seeds are ripe. "It blossoms early," says Herbert, "but becomes exceedingly inconstant in complexion, from a virgin white varying into other colors; for in the morn it shows a pale green, in the meridian a distempered red, and sets in blackness. The cloves manifest themselves at the extremity of the branches, and in their growing evaporate such sense-ravishing odors, as if a compendium of nature's sweetest gums were there extracted and united." The buds are gathered very carefully by the hand in order that the trees may not be injured, and are cured by placing them on hurdles over a slow fire for a few days, and afterwards in the sun, until they are thoroughly dried. The average produce for an orchard is 6 to 10 lbs. from each tree; some trees have been known to yield 150 lbs. in one season. The best cloves are large, heavy, have a hot acrid taste, and an oily feel. Those which have had the essential oil extracted are shriveled, and usually want the knob at the top. The weight of a lot is often increased by setting the baskets near a vessel of water to absorb moisture. The Chinese use them sparingly for food, and consume a portion in distilling oil from them, to use in perfumery. Fancy work-baskets and other articles are often made from cloves by fastening them together with wire.

MOTHER CLOVES, 下等丁香 *hiá tang ting hiáng*, or 母丁香 *mú ting hiáng*, are the fruit of the plant, and have been of late years imported from the Straits. The price averages from \$10 to \$12 per pecul. They are used by the poor for much the same purposes as the others.

8. CLOCKS, 自鳴鐘 *tsz' ming chung*; watches 時辰鏢 *shí shín piáu*; telescopes, 千里鏡 *tsien lí k'ing*; writing-desks, 寫字盒 *sié tsz' hoh*; dressing-cases, 梳粧盒 *sho chwáng hoh*; jewelry, 金首飾 *kin shau shih*. One half of the importation of clocks, watches, music-boxes, hardware, &c., may be regarded as British property, and the other half as French and Swiss. Twenty or thirty years ago, at least half a million dollars' worth of these articles used to be imported, but latterly the trade has fallen off, as the Chinese make clocks and watches now for themselves, except the steel-part of the machinery, as main-springs, &c., which they purchase. Wooden clocks are taken to a considerable extent, but not so much as ten years ago.

Canvas.	Cochineal.	Coir, its varieties.	Coral, its uses.
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9. CANVAS, *fán pú*, 帆布 or *lí pú*, 哩布. This is used almost entirely by the foreign shipping, and its sale does not extend much among the Chinese. Canvas topsails are sometimes seen upon boats and junks, where they are used in fair winds, as mat sails are not so light and flexible.

10. COCHINEAL, or *yá lán mí*, 呀蘭米 is brought chiefly from the United States. The insect (*Coccus cacti*) has been materially improved by culture, and the article is now divided into wild and domesticated; the latter being collected thrice in a year. The climate and situation of China and Japan being similar to Mexico, perhaps the cultivation of the plant, and domestication of the insect would be successful in these countries; both have failed in India, Java, and Spain. In selecting cochineal, care should be taken that the color has not been occasioned by art; the best sort is "large, plump, dry, and of a silver white color on the surface." A watery infusion dyes scarlet; an alcoholic produces a deep crimson; while an alkaline gives a deep purple color. It is occasionally imported from Mexico ungarbled, but most of it comes from America in the garbled state.

COIR, called 椰衣 *yé í*, or 梭 *tsung*. Cocoa-nut coir is imported in small quantities in native vessels, either from Hainan or its vicinity, or from the Archipelago. Most of the coir used by the Chinese is made from the bark of the *tsung* or *gomuti* palm (*Chamærops*), a most useful tree found throughout the southern provinces. It is 30 feet or more in height, and furnishes a quantity of bark annually. The loose bark is stripped off in large sheets from the trunk of the tree, and when steeped in water the fibres separate in short wiry threads, of a dark brown color. It is the material from which the Chinese make cordage, cables, mats, sinnet, brooms, rain-cloaks, sandals, hats, trunks, brushes for block-printing, and other articles. The price for the prepared coir is about \$4 per pecul. In the Archipelago the *gomuti* or *ejoo*, as this substance is called by the Malays, is collected in Borneo and Amboyna for cordage and similar purposes; the thread sells at \$1.50 or \$2 per pecul.

CORAL; the precious red is called *shán hú* 珊瑚; the inferior or false is known as *tú shán hú*, 土珊瑚 and *kiá shán hú*, 假珊瑚; *shih hwá* 石花 is a name for common white coral. Various sorts are brought from the Indian Archipelago in native vessels, partly from Manila, where it centres from the Samar Is. and the Bisayas, and partly from Singapore and India. The black is the most prized, but the fine red is more common and useful; it is wrought into official knobs or buttons and beads, and the fine specimens sell for high prices. The manufacture of ear-rings, finger-rings, and other ornaments consumes the inferior sort, which is priced at \$20 to \$100 per pecul according to the density, color, and size of the pieces. Fancy pieces of white branch coral and madrepores are also sought for to adorn the grotesque plants and fancy rockwork in Chinese

Cornelians or agates.

Cotton.

Cotton Manufactures, leading sorts.

gardens. In former years, considerable quantities were imported in the E. I. Company's ships from the Mediterranean, viâ England; and fine pieces of red, which are not often found in the Indian Seas, still find a good market.

11. CORNELIANS or *agates*; the beads are *má náu chú* 瑪瑙珠, and the pieces 瑪瑙石片 *má náu shih pien*. These are brought from Bombay, to which place they come from Rajpepla in Guzerat, not far from the city of Broach. They are brought in the rough, and also manufactured into beads. They have not heretofore usually passed through the custom-house. The Chinese make ankle rings, ear-rings, armlets, snuff-bottles, bead &c., from these gems, some of which are beautiful specimens of manufacture.

12. COTTON, or *mien huá* 棉花; the chief varieties are Bombay, 軟花 *yuen huá* or soft bales; Bengal 硬花 *kang huá*, or hard bales; Madras, 方包 *fāng páu*, or square bales; Palembang, 舊江 *kiú kiang*. The average annual import into Canton for the last fourteen years has been 244,629 bales, of which 171,000 bales were Bombay, 35,677 bales Bengal, and 37,752 bales Madras; in the years 1847 and '48, there were about 5500 bales of native growth brought from Shanghai, but since then this sort has nearly ceased to come. In 1851 a failure in the native crops caused very high prices to rule in the Canton market, and produced an import from India in 1852 of 409,213 bales; that of the following year, however, being smaller than since 1841, viz., 147,182 bales, showed that under ordinary circumstances consumption could not take off more than about the average of the fourteen years, which may be computed at 241,548 bales. The maximum consumption was in 1852, 303,711 bales, and the minimum in 1854, when the influences of the rebellion were felt in all trade, 135,511 bales. Canton is the principal mart for foreign cotton, and the foregoing statistics may be taken as a criterion of the extent of the trade generally. The market of Amoy takes off about 40,000 bales annually, but with few exceptions the supplies of that market are drawn from Canton. The average annual value of the trade cannot now be estimated at over 5½ to 6 millions of dollars, exclusive of the duties, which amount to about \$400,000. American cotton has ceased to be an article of import. Cotton is always quoted in taels and mace in the prices-current.

13. COTTON MANUFACTURES are white longcloths, *peh yáng pú*, 白洋布; gray shirtings, and domestics, 原色洋布 *yuen seh yáng pú*; twilled cottons, drillings, 斜文布 *sié wan pú*; cambrics, muslins, 袈裟布 *kiá shá pú*; chintz, prints, 印花布 *yin huá pú*; handkerchiefs, 手帕 *shau peh*; gingham, 縐條巾 *liáu tiâu kin*; pulicates, 旗方巾 *ki fung kin*, 柳條巾; colored cottons, *yuen seh pú* 顏色布; velveteens, *tsien jung pú*, 剪絨布; silk.

Fancy Cotton fabrics unsaleable. Cotton Yarn and Thread. Cow Bezoar.

and cotton mixtures, 絲棉布 *sz' mien pú*; woolen and cotton mixtures, 毛棉布 *máu mien pú*, and perhaps a few other sorts. The staples of these fabrics are grey and white shirtings from England, drills and sheetings from the United States. Ten years ago, Canton was the great mart for all these staples, but since then the port of Shanghai has gradually and naturally drawn the trade away from its southern competitor, the great consuming districts of such fabrics being in the provinces bordering upon the Yang-tsz' kiang. In ordinary times Shanghai can annually take $1\frac{1}{2}$ million pieces grey, and 500,000 pieces white shirtings, 300,000 pieces drillings, and 100,000 pieces sheetings. Canton has of late years consumed about 400,000 *ps.* grey, and 75,000 *ps.* white shirtings, 500,000 *pcs.* drillings, and 310,000 *pcs.* sheetings and jeans. Amoy takes off nearly 100,000 *pcs.* grey and white shirtings annually, and Fuhchow lately has consumed about 25,000 pieces. *Chintzes* have been greatly overdone during the last few years, the China markets can only take off a very limited quantity. The principal market for the goods of this description sold in the North is Japan, taken there by the Chinese from Chápú. *Handkerchiefs* have likewise been overdone, and there is no appearance of any increase to consumption. Gingham, velveteens, pulicates, satteens, and every kind of fancy goods, have been repeatedly tried, but they do not take with the people, and are not likely to; one reason being that silks are more elegant and durable, and the style of dress among the Chinese allows no light fabric.

14. COTTON YARN and Cotton Thread, 棉紗 *mien shá* or 棉線 *mien sien*. This article comes from England, the import from the United States, which in 1844 amounted to 1500 bales, having quite ceased. The consumption of this article has steadily increased during the last ten years, but it is questionable whether any increase will take place, unless foreign privileges in the empire become extended. In 1845 the importation did not exceed 6000 bales, while in 1852 it reached 16,000 bales; in 1853, only 14,000 bales were imported, but this may be partly accounted for by the effects of political occurrences at Amoy. Assortments of Nos. 16 to 24 and Nos. 18 to 32 are the most saleable; the extent and value of the trade may be estimated at 45,000 *peculs* annually, at \$25 a *pecul*, say \$1,125,000. Canton can take off 10,000 to 11,000 bales, and Amoy 4 to 5000 bales. Both water and mule yarn are used, but very little of the latter.

15. COW BEZOAR, 牛黃 *niú huáng*. The concretions found in the stomachs of goats were called bezoar in Persia, but the name is now used to designate that found in other animals, as the cow, horse, boar, camel, &c. That produced by the goat sometimes sold for ten times its weight in gold, but it is not now sought after. The composition of bezoar differs often in the same kind of animal, as well as in dissimilar species. The true bezoar is well counterfeited by pipe-clay and ox-gall. The genuine throws off only a small

Cudbear. *Cutch, a dye.* *Cutlery.* *Dammar.* *Elephant's Teeth.*

scale when a hot needle is thrust into it, and in hot water it remains unchanged; when rubbed on chalk, the trace should be yellow, but green on quick lime. That found in the camel is esteemed as a yellow pigment by the Hindoos. The cow bezoar brought from India is valued in this market at from \$20 to \$25 a catty, and is used as a paint and in medicine.

CUDBEAR, called *tsz' fan* 紫粉 or carnation powder, is a dried lichen used in dyeing violet, purple, or crimson; it is procured from the *Lecanora parellus* or *tartarea*, which are collected in France and Sweden. Its colors are not durable when employed alone, and it is therefore used as a body to other expensive dyes, as indigo, cochineal, &c., to make them more lively. It is used but little by the Chinese.

16. CUTCH, or *Catechu, urh chá* 兒茶, was for a long time regarded as an earth, brought from Japan; it is an astringent extract obtained by boiling the heart wood of the *Acacia catechu*, a tree growing near the gulf of Cutch. It is imported from India; that brought from Bombay is friable, and of a red-brown color, and more hard and firm than that from Bengal. The cakes resemble chocolate, and when broken have a streaked appearance. Good cutch has a bright uniform color, a sweetish, astringent taste, melts in the mouth, and is free from any grittiness. But it varies considerably even when good; some kinds being ponderous and compact, others very light and friable; some more and others less astringent; which differences seem to result from the manner and the seasons in which it is obtained. The Chinese use it to a large extent as a brown dye and medicine, and people whose employment injures their feet, sometimes rub it on the skin to harden it; the value varies from \$4 to \$5 per pecul.

CUTLERY, *tieh ki, táu kien*, 鐵器刀劍 as swords, knives. The consumption of knives is extending a little, almost wholly in the cheapest sorts; padlocks, hinges, locks, and other small articles are also taken.

DAMMER, or *Damar* 吧嗎油 *pá má yú*. This is a kind of indurated pitch exuding spontaneously from several species of pine in the Indian islands; there is a hard sort, and a white, softer kind. It is found in big lumps, under the trees or on their trunks, and in large quantities. It is mixed with a softer kind which makes it less brittle; and is then used for paying seams in boats, and other wooden vessels. It is brought to China in native vessels, probably not to a very large amount, as the native preparation of lime, oil and rattan oakum serves the same purpose. It can be obtained in Borneo for 50 cents per pecul.

17. ELEPHANT'S TEETH, or *siáng yá* 象牙; the pieces are called *yá sui* 牙碎. These are obtained in South Africa, and imported from Bombay; but the best and largest part is brought from Siam in juuks; a good deal finds its way into China direct from Burmah.

Fishmaws.	Flints.	Glass and Window Glass.	Gambier.
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They should be chosen without flaws, solid, and white; for if cracked or broken at the point, or decayed inside, they are less valuable; every tusk, and also the cuttings and pieces, however, are useful to a greater or less degree. The largest and best weigh from 5 to 8 to a pecul, and decrease in size to 25 in a pecul; a large sound tusk often sells for \$150 or more.

18. FISHMAWS, or 魚肚 *yú tú*. These are the stomachs of sharks, and are used as an article of luxury among the Chinese. They are of a cartilaginous nature, and need only to be properly dried to fit them for the market; they are of a yellowish tinge, and are cured by stretching them in the sun. If they become damp, they soon decay and are then worthless. They are brought from India and the Archipelago. Fishmaws, birds-nests, deer and buffalo's sinews, biche-de-mer, shark's fins, and some other curious animal substances, are eaten by the Chinese, chiefly for their supposed aphrodisiac properties.

19. FLINTS, 火石 *ho shih* *i. e.* fire-stone, are brought from Europe in the rough, sometimes as ballast; they are used in tinder boxes, and in the glass manufactories; the importation is gradually increasing.

20. GLASS 玻璃水晶器, *po li shwui tsing ki*, and 玻璃片 *po li pien*, or window glass. Fifty years ago, the importation of broken glassware was an important item in the trade at Canton, and is still brought a little, but the Chinese have since so much improved as to make much of their own glassware. They have known how to make glass and other vitreous compounds for ages, but the manufacture of table ware is recent. Their glass-houses are small establishments, and the number in Canton alone is very great; the workmanship of some of their ground lamp-glasses is highly creditable; elegant crystal and Bohemian ware, window-glass, pier-glasses, and domestic glassware, are all imported to some extent. Colored glass panes are also made in Canton, and the demand and assortment have both increased within ten years.

21. GAMBIER, or 檳榔膏 *pín lǐng kiáu*, *i. e.* betel-nut fat. This is sometimes confounded with cutch, and the properties and uses of the two are similar. Gambier is obtained by boiling the leaves of a vine (*Uncaria gambier*), in caldrons for five or six hours until a strong decoction is formed; they are then taken out and strained above the boiler, while the extract is boiled almost to dryness, when it is cooled and the water drawn off; a soapy substance remains, which is dried and cut up as it is wanted. It is of a brownish yellow color, and everywhere used in the Archipelago to chew with betel-nut, being first mixed with a little lime. Large quantities are brought from Singapore and Java, at a prime cost of \$1.75 per pecul, for dyeing cottons and hemp; the color is at first an oker yellow, which soon changes to a dirty brown. It is also used to tan leather; the proportion of tannin in gambier is seven or eight times that in oak bark.

Ginseng, crude and clarified. Gold and Silver Thread. Gums. Gum Benzoin.

22. GINSENG, or *jin-san* 人參; clarified is *chú tsing san sū tih*, 除淨參鬚的; crude is *yáng san sū* 洋參鬚. This is the dried root of the *Panax quinquefolia*, though it is probable that the Chinese and American plant are different species. It is obtained in Manchuria in the wilds north of Corea, and also in the United States, and is considered by the Chinese as a panacea. All the ginseng collected in the empire is imperial property, and a quantity is annually sold to faithful subjects, who have the privilege to purchase it at its weight in gold. The roots are about the size and length of a man's little finger, and when chewed have a mucilaginous sweetness; and if good, will snap when broken. They should be sound, firm, and free from worm-holes; the clarified is translucent, which is made by steaming, skinning and drying it in the United States. The crude is the natural dried root. The Chinese prefer that which comes from their own woods, even when they can see no difference. When first brought from America, the profits were 500 or 600 per cent.; but the price has declined to a very moderate profit, owing in a good degree to the increased expenses in collecting the root in America, for such is the coyness of this plant that it cannot be cultivated. Clarified ginseng varies from \$80 to \$120 a pecul; the crude, from \$35 to \$70 a pecul; five per cent. is allowed for loss in weight on this article.

23. GOLD AND SILVER THREAD called *kin yin sien* 金銀線, divided into the *chin* 真 or real, and the *wei* 偽 or imitation. It is imported from England and Holland; the Dutch is considered to be the best. It is used in embroidering caps, purses, shoes, ladies' dresses, and ornamenting other similar objects. The quantity imported is great; but being of great value in little bulk, is usually smuggled.

24. Gums. Besides the gum-resins here mentioned, a few others are occasionally brought, as gum arabic, stick lac, copal, gum animi, and rosin; damar and gamboge also properly come under this designation.

Benzoin or Benjamin, 安息香 *ngán sih hiáng*. This balsam is the concrete juice of the *Styrax benzoin*, which is cultivated in Borneo and Sumatra, in a rich moist soil. When the plants are seven years old, an incision is made in the bark, and the gum is carefully scraped off for three years; this first gathering is called *head*; the brown and inferior, produced during the next eight or ten seasons, is called *belly*; the tree is then cut down, and all the gum scraped from the fragments, as *foot*: the first quality, varying in price at the emporia, from \$50 to \$100 per pecul; the second from \$25 to \$45; and the worst from \$8 to \$20 per pecul. The gum is brought from the interior in large cakes, which require to be softened by boiling before they are packed; care should be taken to free them from external impurities. Good benzoin is full of clear, light colored spots, and when broken exhibits almond-like portions whiter

*Gum Olibanum, and its uses.**Myrrh and Bdellium.**Dragon's Blood.*

than the rest. Leaves, sticks, and bark are mingled with the inferior, opaque brown sorts; it is almost tasteless, but when rubbed or heated gives off an extremely agreeable odor. The Parsees import benzoin, but the total amount is not great; native vessels occasionally bring it from Borneo.

Olibanum, jú hiáng 乳香 *i. e.* milk fragrance; *táu jú 桃乳* *i. e.* peach milk, is a term for the best sort. This is the frankincense or *thus* of the ancients, and is used in China for burning in temples and for making plasters. It is collected by incision from the *Boswellia thurifera* and *glabra*, large trees found in India. There are two principal sorts; the drops of the best are very brittle, of a light yellow, varying to red or brown, opaque or semi-transparent, sticky and splintery when broken. The inferior is a dirty grey, and mixed with impurities. It has a balsamic smell, a sharpish bitter taste, and when chewed adheres to the teeth, and gives the saliva a milky color. It burns with a pleasant fragrance and much smoke, leaving a black ash. In market, olibanum is not often badly adulterated; the boxes each contain one cwt. Garbled olibanum is valued at \$6 per pecul, and the ungarbled at \$2 or \$3 per pecul in the Canton market.

Myrrh or 沒藥 *moh yoh*. This gum is brought from Bombay; and is obtained by incision from the *Balsamodendron zeylanicum*. That which comes to China is not the same article as the Arabian, being quite opaque, of a blackish red color, greasy fracture, and softens by the heat of the hand; it has an acrid, warm and bitter taste. The pieces ought to be clear, semi-translucent, and unctuous, but it has usually other gums mixed with it. Loureiro says the berries of the *Laurus myrrha* afford a kind of reddish oil of the odor of myrrh, which is used in CochinChina for purifying ulcers, and supposes the East Indian myrrh is obtained from it. The price varies from \$4 to \$18 per pecul in the Canton market, but the importation has almost ceased in the past few years.

Bdellium is a gum-resin obtained from an *Amyris*, but that which comes to China is only another name for an inferior sort of myrrh; both of them are probably much adulterated in this part of the world, compared with pure myrrh.

Dragon's Blood, or *lung yen hiáng 龍涎香*, is the dry resinous substance which covers the fruit of the *Calamus draco*, a sort of rattan growing in Borneo and Annam, obtained by melting or boiling it off. The good is of a bright crimson when powdered, and semi-transparent to the light. The tears are usually the firmest, and the most resinous and pure. If it is black when powdered or very friable, it is inferior. It is often adulterated with other gums; the genuine melts readily and burns wholly away, is scarcely soluble in water, but fluent in alcohol. Its uses are various in medicine, painting, varnishing, and other arts. The best is procured at Banjermassing, and comes to this market from Singapore in reeds, selling at \$15 to \$35 per pecul.

Gram. Horns. Rhinoceros' Horns. Linen. Mace. Mother-o'-pearl Shells.

GRAM, or split peas, 白荳 *pek tau*, is imported from India to some extent; it is bought by the Chinese for grinding and making into bean-curd and cakes, of which they consume an incalculable amount; the Indian grain is larger and whiter than the native, and epicures think it richer.

25. HORNS, 牛角 *niú kioh*, and *Bones* of various animals are brought from the adjacent countries and islands, and form an important article of import with the native vessels. The horns of buffaloes and oxen form the largest part, but those of deer and goats are also brought to make into hartshorn, which is considered a good remedy in nervous ailments. Buffaloes' horns are worked into lanterns, some of which are of large size and highly elegant; the manufacture of small opium boxes annually consumes many hundred peculs, besides what is cut into handles, ferules, rings, canes, paper-knives, combs, and other useful articles. The bones are carved into buttons, and small fancy articles.

26. HORNS, *rhinoceros'*, or 犀角 *si kioh*. The best sort comes from CochinChina, and sell at times for \$300 apiece; an inferior sort comes from India, of which some probably are from southern Africa, which sell for \$30 and upwards apiece. The Chinese carve the finest pieces into elegant cups, cornucopias, &c., but most of the importation is used as a medicine; it is also sent to Japan by the Chinese.

27. LINEN, 麻布 or 竹布 *má pú* or *chuh pú*, is almost entirely purchased by the foreign community, nor does its importation increase; the Chinese wear no under garments, strictly so called; and their own grasscloth is cheaper than foreign linen. Cotton and linen, coarse linen drilling, and silk and linen mixtures, are all included under this head.

28. MACE, 豆蔻花 or 玉菜花 *tau kau hwá* or *yuh kwó hwá*. This is the reticulated arillus of the nutmeg, *Myristica moschata*, whose properties it has in a less degree. Good mace is horny and oily, red when gathered, but turns to an orange when sprinkled with salt water and dried; it has a pleasant, aromatic odor, with a pungent, bitterish taste. It is packed in bales, and care is requisite that it be not too dry or too wet, as both alike injure it. There is an inferior kind of mace got from a wild nutmeg found in Malabar, which externally resembles the true; it has a resinous taste and is but slightly aromatic. Mace has nearly disappeared from this market within the last few years.

29. MOTHER-O'-PEARL shells, 雲母殼 or 海珠殼 *yun mi koh* or *hai chú koh*, are brought to this market from the islands of the Pacific and Sooloo seas. It is a small trade, and does not increase much, owing to the scarcity of suitable sound shells. There are seven qualities of naker, the best of which comes from the *Avicula perlicre*; species of the *Haliotis*, *Placuna*, and *Unio*, also supply it. A large proportion of that which is brought to China is re-exported

<i>Copper little used.</i>	<i>Sorts of Iron imported.</i>	<i>Spelter.</i>	<i>Tin.</i>
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in the shape of fancy articles, seals, and pearl buttons of different qualities. Large, thick shells are the best, and those should be chosen of which the naker or inner surface is not discolored, decayed, or fractured.

30. METALS. The consumption of metals from abroad depends very much on their price, rather than on a need which must be supplied; when high, the native mines furnish some of them cheaper. The Chinese have mines of lead, quicksilver, iron, calamine, tin, and copper.

Copper, tung pien 銅片 and *tung tiáu* 銅條, i.e. copper slabs and copper rods. South American copper is brought to this market from England and the United States, but it is scarcely ever landed; much of that in slabs is sent on to India, and that in sheets, rods, and bolts is used by the foreign shipping. The Chinese in a few instances sheath their vessels with copper; the Siamese and Cochinchinese often do so. The copper found in Japan contains gold in alloy; it occurs in the market in small red colored bars, six inches long, flat on one side and convex on the other, weighing 4 or 5 lbs. each; this copper is the most valuable of any found in Asia; the Chinese bring it from Japan to Chapú in small lots.

Iron, tieh pan 鐵板, *tieh tiáu* 鐵條 *tieh sien* 鐵線 *tieh fú* 鐵符 i. e. iron sheets, rods, wire, and hoop; is an article of importance in this market; pig iron is not imported. Bar iron from 1 to 3 inches wide, and square and round rod of $\frac{1}{2}$ inch and less, are the common sizes. Bar is worth from \$1.80 to \$2.60 per pecul; nail rod from \$4 $\frac{1}{4}$ to \$4 $\frac{3}{4}$; wire from \$7 to 8; and hoop about \$4 per pecul. The demand for iron is more uniform than for any other metal, and doubtless it is the convenient shapes in which it is imported that induces the Chinese to take it.

Spelter or 白鉛 *peh yuen*. This is the zink of commerce, used in the manufacture of brass; it is in plates of half an inch thick of a whitish-blue color, which sell at \$5 $\frac{1}{2}$ to \$6 per pecul. There was formerly a monopoly of spelter, so that no foreigner could either buy or sell it; the consumption has decreased to a trifle, as tutenage and white copper prevent much consumption of foreign spelter. The cash used in Cochinchina is made of zink, adulterated with iron and lead.

Tin 錫 *sih* or 洋錫 *yáng sih*. This metal is found in the island of Banca. It occurs in both Chihli and Húnán, but the metal is not abundant in China. Banca tin is cast into ingots weighing from 20 to 60 lbs.; that of a superior quality is called 'Banca tin,' while the inferior, known as 'Straits' tin,' is obtained chiefly in the Malayan peninsula; and is not unfrequently adulterated with lead. The former sells for about \$21, and the latter for \$16 or \$17 a pecul; the consumption of foreign tin has decreased during the last few years, and the annual importation does not now reach 5000 peculs.

<i>Tin Plates.</i>	<i>Quicksilver.</i>	<i>Steel.</i>	<i>Lead and its uses.</i>	<i>Nutmegs.</i>
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Tin Plates, *má hau tieh* 馬口鐵 or *sih pien* 錫片 are brought from England and America in boxes containing 112 lbs. or from 80 to 120 plates; and sell for about \$6 to 7 per box. The demand for them is steady but not large.

Quicksilver or *shwui yin* 水銀 is brought from Europe in iron flasks; the mines in California now more than supply the demand in China, which is altogether not over 12,000 flasks annually, each about 75 lbs. at a total value of \$400,000. Quicksilver is frequently adulterated with lead or tin: the fraud can be detected by boiling it to evaporation, when the other metals will remain; if the quantity of extraneous metal is great, the quicksilver feels greasy, and cleaves to the skin, while the pure runs off clean. Its market value is very fluctuating. In 1790 it was priced at 35 to 40 taels per pecul; in 1848 at \$130; and in 1855, at \$60.

Steel, or *káng* 鋼. Both Swedish and English rough or blistered steel are the kinds usually imported. The importation increased for several years, but latterly the demand has fallen off. The Chinese are not skilled in making steel articles, and their cutlery is a burlesque on the name.

Lead, or *heh yuen* 黑鉛. This metal comes in the forms of pig and sheet lead. The price varies from \$7.50 to \$9 per pecul. Lead, comparatively speaking, is scarce in Asia and in the Indian islands. The annual import has fallen from 40,000 peculs ten years ago, to 5000 or 6000 peculs at present, the greatest part of which comes from England. The American importation is trifling, but usually bears a higher price. The lining of camphor boxes, tea-chests, and canisters consumes a large proportion of the lead brought to this market. The mode of making the sheet is very simple and expeditious. Two tiles, covered with several thicknesses of paper, are placed near the melted lead, and the workman, lifting the upper one with its edge resting on the lower tile or stone, pours the liquid metal on the under one, and instantly drops the one he holds in his hand; the sheets are made into the requisite form by soldering. The art of dropping the upper one in such a manner as to make the sheet of a uniform thickness is the only difficult part of this simple operation.

31. *Nutmegs*; the cleaned are *sháng tang tow kau* 上等豆蔻, the uncleaned are *草蔻連殼* *tsáu kau lien koh*. These are the nut of the *Myristica moschata*, which grows native in the Banda isles, and is cultivated at Singapore, and other places. "The nutmeg," says Sir Thomas Herbert, "like trees most excellent, is not very lofty in height, scarce rising as high as the cherry; by some it is resembled to the peach, but varies in form of leaf and grain, and affects more compass. The nut is clothed with a defensive husk, like those of a baser quality, and resembles the thick rind of a walnut, but at full ripeness discovers her naked purity, and the mace chastely entwines (with a vermilion blush,) her endeared fruit

*Nutmegs, kinds and deceptions.**Opium, four sorts ; tests of good.*

and sister, which hath a third coat, and both of them breathe out most pleasing smells. The mace in a few days, (like choice beauties) by the sun's flames becomes tawny ; yet in that complexion best pleases the rustic gatherer." The plant bears three crops in a year, buds, blossoms, and fruit appearing at once—but the fruit requires nine months to become perfect. Good trees will produce from ten to twelve pounds of nuts and mace annually, but the average of the trees in an orchard is 65 oz. or about two peculs to an acre. Nutmegs of a lightish-gray color, a strong, fragrant smell, an aromatic taste, large, oily and round, and of a firm texture, are the best. The holes made by insects eating into the kernel, are often neatly filled up, or they are distilled for the oil, or digested in alcohol for the perfume, and then passed off as fresh ; these deceptions can be ascertained by the inferior weight. They are dipped in lime-water to preserve them from worms, or packed in layers of dry chunam. In commerce, nutmegs are divided into royal and queen, the former are of an oblong, and the latter of a round shape ; the cultivated sort is also called female, and the wild, the male nutmeg. In the China market, nutmegs form an insignificant article of commerce.

OPIMUM, or *á pien* 鴉片 ; Benares is called *kú ní* 姑坭 ; Patna *kung ní* 公坭 ; Malwa, *peh pí* 白皮 ; Turkey, *kin ní* 金坭 or golden dirt ; the native is called *o-fú-yung* 阿芙蓉. This is the concrete juice of the *Papaver somniferum*, a poppy cultivated in India and Turkey. The cultivation of it is a strict government monopoly in British India ; in Malwa and other native states it is free, but the drug is subject to heavy duties in its transit to Bombay. That raised in Behar (called Patna in commerce) and Benares is superior to the Malwa, and both are preferred by the Chinese to the Turkey opium. Good opium is moderately firm in texture, capable of receiving an impression from the finger ; of a dark yellow color when held in the light, but nearly black in the mass, with a strong narcotic smell, and free from grittiness. That produced in different countries, however, varies considerably, and experience alone can determine the best article. The value increases for a short time by age ; but this soon ceases to be the case, and Turkey opium in particular deteriorates unless carefully preserved from the air. Opium is adulterated with leaves, dirt, and other substances ; if very soft it is not usually good. The trade is now carried on by means of ships stationed off the five ports and at other points on the coast, as Chinchew and Swatow, to which the drug is carried in small vessels ; there is comparatively little sold by migratory vessels to the east of Hongkong, but the towns on the west are supplied by trading lorchas and native boats. No efforts have been made by the Chinese authorities to suppress the traffic, that deserve to be mentioned, since those of Commissioner Lin in 1839, and the war with England which ended with the Treaty of Nanking, and

Pearls. Pepper, white and black. Pulchuck. Rattans of two qualities.

proved to them that no legislative action could stop its use. The amount grown in India annually increases, although at a loss to the E. I. Company, and the quantity to be put up at auction is to be reduced; the number of chests consumed in 1854 and 1855 was not far from 65,000 chests annually, less than in the three previous years, but the sums expended upon the drug have been about the same for six years past.

PEARLS, *yang chú*, 洋珠 are brought from Bombay to the value of \$300,000 and upwards annually, but no duty can possibly be levied on them; they are sorted into classes by their shape and size; the smallest sort are taken by fanciful invalids as a medicine. The larger portion of the import goes to the northern cities, where ladies use them for ornaments in ear-rings and headbands; for no Chinese lady considers herself elegantly dressed without a crescent-shaped headband on her forehead studded with pearls, to contrast with her black hair.

32. PEPPER, or 胡椒 *hú tsiaú*. This spice is the fruit of the *Piper nigrum*, a vine found in Sumatra, Malacca, Borneo, Siam, Java, &c. The fruit is collected semiannually; the vine bears when three years old, and continues to do so for about seven. As soon as the fruit has changed from a green to a red color, it is picked and put upon mats to dry, and afterwards separated from the fruit stalks, and when dried thoroughly is ready for market. Good, black pepper has a very pungent smell, an acrid and hot taste. The largest grained and smoothest skinned is the best. Pepper is distinguished in commerce as the white and black, the former being the seed deprived of its skin by immersing in water and rubbing between the hands; but the difference of price is hardly sufficient to pay for the extra labor. The pepper from Penang and Sumatra is superior to that which comes from Java and Borneo; about a million and a half pounds are annually brought to China in foreign bottoms. Native vessels also bring a good deal. The Chinese use it as a tea in sickness, as well as a spice; the consumption is mostly confined to the northern provinces.

33. PUTCHUCK, or *muh hiang* 木香, is the fragrant and spicy root of a species of the thistle tribe (*Aucklandia*), growing wild in Cashmere, where it is collected by the natives under the name of *kooth*, and sent to Calcutta and Bombay. In color and smell it is not unlike rhubarb; becomes mucilaginous when chewed, and gives off a pleasant smoke. It is sometimes reduced to a powder and mixed with clay and fine cedar dust, and then burned by the Chinese as incense in temples; but the greatest portion of the import is shaved into thin slips, and taken as a tonic and gentle stimulant in union with other simples.

34. RATTANS, or *shá tang* 沙藤 are furnished by two species of palm (*Calamus usitatus* and *Calamus maximus*), spiny, climbing plants found wild in the Malacca peninsula and most of the islands of the Indian Archipelago, but in the greatest perfection in the south

Rattans & their uses. Rice & other Grain. Rose Maloes. Sago, how made.

of Borneo and the Battak country in Sumatra. Coarse sorts grow to the length of 150 feet or more, and when cut require only to be stripped of the epidermis, which is done by drawing the stem through a notch in a tree, then doubled and tied up in bundles containing a hundred each. As they require no cultivation, the natives are enabled to sell them at the emporia from 5 to 6 cents a bundle. Such as are black or discolored, or those from which the glazing flies off on being bent, should be rejected. They are imported to the extent of 50,000 peculs annually in foreign bottoms, besides what are brought in native vessels. They are divided into Banjer-massing and Straits, the latter comprising the inferior qualities from Sumatra and Malaysia. The Chinese use them for withes, and weave them into chairs, mats, baskets, beds, &c.—A score of bamboo poles for joists and rafters, two or three dozen fathoms of rattan ropes, and a supply of palm-leaves and bamboo mats for a covering, make a common house for the poor in the south of China; five dollars will construct a dry tenement.

35. RICE and all grains, *yáng mí* 洋米, *yáng meh* 洋麥, *wú kuh* 五穀 Rice is the staff of life among the Chinese, and the importation of it is encouraged by all possible means. Formosa, Luzonia, Siam, Bengal, Arracan, and the Indian islands, especially Bali and Lombock, supply great quantities. The price given for cargo rice varies from \$1 $\frac{3}{4}$ to \$2 $\frac{1}{4}$, rising in seasons of scarcity to \$3 $\frac{3}{4}$, and for very good, to \$4 per pecul; the trade is very fluctuating. It is illegal to export rice from the country, and even the shipment of it from one port to another requires a special application and permit; one reason for this is the responsibility laid upon the local magistrates to keep their own districts supplied with food. Rice is the only article for importing which the Chinese government has ever given a bounty; ginseng the only article on which a high duty is levied to protect the domestic produce; and opium and salt the two now made contraband.

36. ROSE MALOES, or *sù hoh yú* 蘇合油. This is a thick scented gummy oil of the consistence of tar, obtained by pressure from beans, and called *gurmala* in Bombay; it is brought from Persia and Upper India to Bombay, and when good has a pearly appearance; it is used in making plasters among the Chinese, and frequently also as a purge.

SAGO or *sí kuh mí* 西穀米, is brought to some extent in native vessels. It is the farina from the stem of several species of palm found in the Archipelago, the *Metroxylon sagus* and *lævis* furnishing a large portion. The trees are cut down just before flowering, sawed into logs, and split down to the pith, when the pulp is taken out, beaten with mallets and washed until only the mealy powder remains. The meal is cooked by baking. It is made ready by sewing it into bags made of the leaves of the tree, seven of which weigh about a pecul; all the *sago tamping*, as these bags are called, is brought to

Saltpetre. Shark's Fins, two sorts. Deer's Sinews. Skins, Furs, and Hides.

Singapore for refining and granulating. This is done by mixing it with pure water, and rubbing the paste into little grains by forcing it through a seive into an iron pan over a fire. When well cured, it has a pearly lustre, is slightly reddish, and dissolves in hot water into a starch. There are manufactories in Singapore for making sago, from whence many thousands of peculs are annually exported, principally to England.

37. **SALTPETRE**, *yáng siáu* 洋硝, was formerly prohibited, the Chinese being under the impression that foreigners exported it for making their own powder; it is not common or cheap in the south part of the country. It is brought from Singapore, to which port it is carried from Sumatra, being found in caves and other covered places; and from India, where it is obtained by lixiviating the soil in nitre beds. The province of Chihle supplies large quantities of saltpetre.

38. **SHARK'S FINS** or *sha chí* 鮫翅. The fins of the shark are sought for from the Indian Ocean to the Sandwich Islands to supply this market. The chief supply is from Bombay and the Persian Gulf. They are fat, cartilaginous, and when cooked into soups, are esteemed by the Chinese as a stimulant and tonic. They should be thoroughly dried and kept from moisture. About five hundred fins are contained in a pecul; they are sorted into white and black. The price is from \$6 to \$60 per pecul. There seems to be little choice as to what species of shark the fins are from, but those of a whitish color are valued higher than the black sort. Sharks, dogfish, and rays of all kinds, form a common article of food among the people on this seacoast.

SINEWS of the deer and buffalo, *luh kin* 鹿筋 or *niú kin* 牛筋 are eaten by the Chinese under the impression that they are peculiarly strengthening. The latter are collected in the Archipelago and Siam, by the Chinese who know the tastes of their countrymen, and make shipments in small quantities. They are boiled with eggs, shrimps, &c., to a stringy jelly, and eaten by invalids, chiefly as a restorative.

39. **SKINS and FURS**; sea otter, 海龍 *hái lung*; fox, 狐狸 *hú lí*; tiger, leopard and marten, 虎豹貂 *hú, páu, tiáu*; land otter, raccoon, shark, 獺貉獠 鮫魚 *táh, koh kiuen, shá yú*; beaver, 海驪 *hái lo*; hare, rabbit and ermine 兔灰鼠銀鼠各等皮 *tú, huài shú, yin shú, koh tang pí*. Hides, tanned and untanned, 生熟牛皮 *sang shuh niú pí*. Twenty years ago, the fur trade with China amounted to upwards of a million of dollars annually; but during the last two or three years very few skins or furs have been brought to Canton; the few which are still taken in the American forests command better prices in the European markets. The amount carried into China over the northern frontier is however still considerable, though no account of the number can be

Smalts.	Soap.	Stockfish.	Seahorse Teeth.	Seaweed.
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obtained. Lamb-skins of various sorts are much used in the northern parts of the country. The importation of cow and ox-hides is from the Archipelago, but nothing definite is known as to its amount. The manufacture of leathern trunks, and camphor trunks covered with leather, shoes and boots for foreigners, and minor purposes in the arts, consumes most of the hides imported. The Chinese use only a thin piece of hide on the bottom of their shoes to protect the felt.

40. **SMALTS**, 洋清 *yáng tsing*, 大清 *tá tsing* or 花桃清 *huá tau tsing*, is an oxide of cobalt melted with silice and potash. The Chinese use it for painting on porcelain and glazed copper vessels, and in distemper; also in coloring glass. The consumption has never been very great, but the demand is constant. There are mines of arsenical cobalt in the island of Hainan, and their produce is used in native glass manufactures after roasting and pulverizing.

41. **SOAP**, or 番靚 *fán kien*, is used sparingly by the Chinese, nor is it satisfactorily ascertained that they know how to make it. That brought from India in cakes is a coarse, gritty substance, more like barilla than soap; it is largely used in this region, and the importation is slowly extending. The Chinese have many poor substitutes for soap.

42. **STOCKFISH**, 柴魚 *chái yú* or 乾魚 *kien yú*. These are dried fish brought from Germany and England, cured without the use of salt. In appearance, when preserved, they resemble codfish. The quantity brought is small, compared to what it was ten or twenty years ago. The Chinese themselves cure immense quantities of fish in this way.

43. **SEAHORSE TEETH**, 海馬牙 *hái má yá*, are brought from California, Sitka, and other parts of Western America, and are used by the Chinese in the same manner as ivory; they are the teeth and tusks of the walrus, sperm whale, and other cetaceous animals.

SEAWEED, 石花菜 *shih huá tsái* or 鹿角菜 *lù kioh tsái*. Of various kinds is chiefly imported in junks, as well as collected on this coast; the most common brought from the Archipelago is that from which agar-agar is made but no particulars can be ascertained regarding the trade. Species of Laminariæ and Floridæ are collected on the coasts of Shantung, and cleaned and boiled to a jelly for food; large quantities are used in various medicinal, coloring, and culinary preparations.

44. **TREASURE**, 金銀洋錢 *kin yin yáng tsien*. The silver bullion imported into China now consists chiefly of Mexican and Peruvian dollars, the Spanish having altogether ceased, and the coins of England and India coming in very small amounts. In 1853 after many previous ineffectual efforts, an arrangement was made among foreigners in Canton, and at the instance of the foreign con-

*Treasure in coin and bullion.**Wine or Beer.**Woods.*

suls, was enforced upon the Chinese by their own authorities, by which all silver coins were to be received at their real intrinsic value in payment of duties at the custom-house. Of course all kinds of dollars soon became current at par with Spanish dollars, but still by weight at the rate of 717 taels per \$1000. The preference of the Chinese in the country for Carolus Spanish dollars caused them all to be collected at Canton, and sent wherever a premium could be obtained. Since 1853, the disturbed state of the country having rendered imports nearly unsaleable, there have been very large importations of silver specie and bullion (chiefly of Mexican dollars) to settle the balance of trade in favor of China; in the twelve months from Sept. 1853, \$12,100,000 were brought to Hongkong; these importations were greatly diminished as soon as a material reaction in the general import trade occurred. Transactions at Canton are now generally conducted by means of Mexican dollars, but a considerable period must elapse before the old chopped Spanish dollars cease to be current in the tea districts. At Fuhchau, the only recognized specie is the unbroken, chopped Spanish dollars. At Shanghai the clean "old head" (or 四工銀 *sz' kung yin*) dollars (*i. e.* Spanish dollars, chiefly of the reign of Carolus III.) still maintain their superiority, and are valued nearly one third higher than other descriptions. In the trade with Formosa that has recently sprung up, clean Ferdinand dollars, or chopped dollars similar to those current at Fuhchau, are used.* Considerable amounts of gold are received from California and Australia, partly as return for exports from China and partly the savings of Chinese emigrants returning home; the annual importation of this kind has never much exceeded \$1,000,000. Sovereigns, doubloons, Californian \$50 ingots, and eagles, are in small brought amounts; their market value is about 7 per cent. discount. Bar silver called *plata pina* (*i. e.* cone silver from its shape) from South America is unsaleable at its real value, and very little is now seen here.

45 WINE, beer, &c. 洋酒 *yang tsiú*. With the exception of a little cherry-brandy, and a few liquors now and then taken away by officials, all the wine, beer and spirits imported are consumed by foreigners; all attempts to introduce their use among the Chinese having failed—a result not at all to be regretted.

46. WOODS. Besides the three sorts mentioned here, small amounts of several other kinds are imported for consumption among the Chinese, as rosewood, aigle wood, kayabuco wood, yellow wood, satin wood, redwood, &c. Their own forests furnish them with a large variety of fine woods for cabinet-work, and a good deal is brought across the western frontier. Junks from Manila, Siam, and Singapore bring spars for yards and masts.

* At Hongkong the currency is composed of an incongruous mixture of English, Indian, Spanish and other coins, which require all to be reduced to their value in exchange with Mexican dollars—the practical standard.

Woods:—Ebony, Sanddl-wood, Sapan-wood, &c. Woolen Manufactures.

Ebony 烏木 *wú muh*. This is the heart wood of the *Diospyrus ebenus*, a tree growing in Mauritius, Ceylon, Luçon, and other islands of the Indian Ocean. The best wood is of a jet black, free from veins and bark, the texture compact, free from cracks and not worm-eaten. There are other kinds of wood resembling ebony in external appearance, which are often substituted for it, and the Chinese successfully practice staining hard wood black to resemble ebony.

Sandal-wood 檀香木 *tán xiāng muh*. This is the heart wood of the *Santalum album*, which grows in India, and many of the islands of the Indian and Pacific Oceans. The tree resembles myrtle in size and appearance. The billets are, after felling, barked, and then buried until the outer wood is eaten off by the white ants, leaving only the heart. The color varies from a light red to a dark yellow; the deepest color is the best. The best wood is near the roots. In choosing sandal-wood, the largest pieces, and those of firm texture, hard, free from knots or cracks, of a sweet smell, should be selected. The best sandal-wood comes from the Malabar coast, and sells from \$10 to \$18 a pecul; that brought from Timur is worth \$8 to \$10; while that found in the South Sea Islands, being small and knotty, is valued from \$3 to \$6. The chips also form another sort. The Chinese use sandal-wood in the form of a fine powder to make incense sticks to burn in their houses and temples. The best pieces are taken to make fancy articles, as fans, card-cases, balls, boxes, &c., which are beautifully carved in the same style as the ivory ware. An oil is extracted from the wood, which is valued for its aromatic properties. It has the consistence of castor oil, is yellow and highly fragrant: it sinks in water.

Sapan wood or sú muh 蘇木 This is the wood of the *Cæsalpinia sapan*, a tree which grows in India, Luçon, and Siam. The wood has the same properties as the Brazil wood in an inferior degree, and on that account is not imported to Europe. It is employed for its red dye, which is the best known to the Indian islanders. The cloth is put into the decoction and the color set with alum, and afterwards made more lively by washing it in potash-water and spirit. Its value is about \$2 per pecul in the Canton market; large quantities are brought from Manila.

47. WOOLEN MANUFACTURES, viz., broadcloth 大呢 *tá ní*; Spanish stripes and long-ells, 嗶嘰 *píh kǐ*; kerseymere, 小呢 *xiǎo ní*; blankets, 洋白氈 *yáng péh chén*; English camlets *yú shá* 羽紗; Dutch camlets 羽緞 *yú tuán*; bombazet 羽綢 *yú chāu*; bunting 羽布 *yú pù*; carpets 地氈 *tí chén*. The trade in woolens was formerly one of the important branches, and the annual consumption amounted to nearly a million sterling; the value in 1834 is stated at £835,217, and at the beginning of this century the value of the export of tea and import of woolens to and from

*Woolens not much used.**Woolen Yarn.**Alum.*

England was not very far apart. Now the Chinese officials, who used to buy them, have either become too poor to purchase fine broadcloths, or else the fashions have changed. German cloths are repacked in England, so that all the importation comes in British ships. Longells are brought in bales of assorted colors, scarlet being the most sought after; Spanish stripes, broadcloths and habit-cloths, are worn by the richer classes; the demand for the last two years has taken off about 35,000 pieces of the former, and 18,000 pieces of the last three. English Camlets are taken to the extent of 8000 pieces, and Dutch camlets about 2000 pcs. Other inferior woolens, as flannel, imitation camlets, stuffs, blankets, bombazetts, bunting, kersymere, &c., are taken off in constantly decreasing amounts; 22,065 pieces came in 1852 from England. Blankets and flannel are liked by the Cantonese, but their use does not extend. The total value of the woolen trade in 1844 was estimated at \$1,375,000; in the season 1853 it was worth about \$740,000; and has since been further reduced. The consumption of Russian woolens is comparatively great in the northern provinces.

48. WOOLEN YARN or *jung sien* 絨線 is difficult of sale, and has almost ceased to be brought; 241 peculs were imported in 1836-37, at \$100 per pecul. The Chinese have learned to knit to a very little extent, but they have not learned to weave woolen cloth.

Section 4.

DESCRIPTION OF ARTICLES OF EXPORT FROM CHINA.*

1. ALUM, 白礬 *peh fân* or white vitriol; the crystals are 青礬 *tsing fân*; it is exported to India and the Archipelago, where it is regarded as superior to the native product. About 75,000 peculs have been annually exported. It is found in the argillaceous schist known as *alum shale*. The provinces of Ngánhwui, Hónán, and Chehkiáng, produce it in considerable quantities, much of which is exported from Ningpo and Shánghái. One mineral spring is mentioned which contains alum in solution. The supply is abundant, but it is often impure from intentional adulteration, or from the

* In addition to other sources of information used in preparing this section, the report of the commercial delegates attached to the French embassy of M. de Lagrené in 1844, called *Étude Pratique du Commerce d'Exportation de la Chine*, published by Natalis Rondot in 1849, has furnished a great number of useful data, which have been incorporated into the various paragraphs in such a manner, with what was contained in former editions of this work, that no other than this general acknowledgement of the assistance derived from it can be given.

*Amomum.**Aniseed Stars.**Oil of Aniseed.**Arsenic.*

rudeness of the manipulations; the taste is not so sharp as that of European alum, and the pieces are usually crystalized and transparent. It is employed by the Chinese in purifying the water which they use for culinary purposes; in sizing and whitening paper, and to a large extent in dyeing silks, cotton, and grasscloth, or in bleaching them.

AMOMUM 細莎荳 *sí shá tau*. The seeds of the *Amomum verum* have a strong, penetrating smell, and an aromatic, warm taste; they are not to be confounded with cardamoms. The tree grows in Sz'chuen, Arabia, and the East Indies. The fruit is shaped like a grape, and contains three cells, each of which has a number of blackish seeds prized for their stimulating properties. The pods are of little value, as also are the seeds when wrinkled and small. When good, the pods are heavy, of a light gray color, and filled with odoriferous grains. Their uses are similar to those of aniseed stars. The packages should be carefully sealed after the selected seeds have been thoroughly dried, or they lose their virtue. The trade is in the hands of natives, though a few cases have been sent to Europe on trial; the seeds cost from 18 to 25 taels per pecul, according to quality.

2. **ANISEED STARS, tá houi 大茴** and **páh kioh 八角** *i.e.* eight horns, are the fruit of a small evergreen tree (*Illicium anisatum*), which grows in Fuhkien, and to a less degree in Kiángsf and Kwángtung; in Japan, and in the Philippines. They are prized for their aromatic taste, and for the volatile oil obtained from them. The name of *star* is applied to them on account of the manner in which they grow, the pods being in small clusters joined together at one end, and diverging in 6 or 7 rays. The husks have a more aromatic flavor than the seeds, but they are not as sweet; those which are bruised or moldy should be rejected. The Chinese use them to season sweet dishes, to chew, and to make a fragrant tea. They are chiefly exported direct to England and the Continent of Europe, at the average value of \$15 per pecul.

OIL OF ANISEED, páh kioh yú 八角油 is made by distilling the pods and seeds, a pecul of the raw material producing about 7 catties of oil. It is put up in tin cases, inclosed in wood, and goes chiefly to Europe and the United States, at an average annual export of 250 peculs, at \$150 per pecul. It is used in perfumery, medicine and confectionary.

3. **ARSENIC, 信石** *sin shih*, **砒礪** *pí siáng*, and also **人言** *jín yen*, or "man's words," by an anagram of the first character. It occurs in Kwángsin fú in Kiángsf, where it is obtained by sublimation from the crude oar, the hartall or sulphuret, and is then again refined. The Chinese employ it in their rice cultivation to destroy insects. The exportation to India is about 50 peculs annually, at \$12 for the refined; it formerly amounted to 250 or 300 peculs annually.

*Bangles and Anklets.**Bamboo-ware, screens, and chairs.*

4. BANGLES, called *shau uh* 手鉅 or *sháu liáu uh* 燒料鉅 by the Chinese, is an Indian name given to wrist and ankle rings. The Chinese make them of a clouded, opaline, or plain vitreous substance to imitate jade stone or chalcedony. They are put up in pairs in boxes, each containing a thousand pairs, and estimated to weigh a pecul, and valued at about \$50. Besides armlets and anklets, the manufacture of ear-rings, archer's thumb-rings, finger-rings, and hair-pins, mouth-pieces of pipes, snuff-bottles, buttons, &c., forms of an important branch of industry. Few of these things are exported, except for the consumption of Chinese in the Archipelago. The material resembles glass more than porcelain.

5. BAMBOO and *bamboo-ware*; screens are *chuh lien* 竹簾, and the ware 竹器 *chuh kí*. This beautiful plant grows over nearly the whole of China, and the industry and skill of the people have multiplied and perpetuated a number of varieties, among which are the black skinned, the pipe, the pencil, the large yellow, the common green, &c. Its uses are so various, that it is not easy to enumerate them all. The shoots are boiled, pickled, and comfited; the roots are carved into fantastic images, into divining-blocks to assist in learning the will of the gods, or cut into lantern handles and canes; the tapering culms are used for all purposes that poles can be applied to in carrying, supporting, propelling, and measuring; for the props of houses, the frameworks of awnings, and the ribs of sails; the shafts of spears, the wattles of abattis, and the handles and ribs of umbrellas and fans; the leaves are sewed into rain-cloaks and thatches; plaited into immense umbrellas to screen the marketeer and his wares, or into coverings for theatres and sheds; the epidermis, cut into splinths of various sizes, is woven into baskets of every form and fancy, plaited into awnings, and twisted into cables. It supplies the bed for sleeping, the chopsticks for eating, the pipe for smoking, and the broom for sweeping;—the mattress to lie upon, the chair to sit upon, the table to eat on, the food to eat, and the fuel to cook it with, are also derived from it:—the ferule to govern with, and the book to study from; the tapering plectrum for the lyre, and the dreaded instrument of the judge; the skewer to pin the hair, and the hat to screen the head; the paper to write on, the pencil to write with, and the cup to put the pencil in; the rule to measure lengths, the cup to gage quantities, and the bucket to draw water; the bird-cage, the crab-net, the fishpole, and the sumpitan, &c., &c., are one and all furnished by this plant, whose beauty when growing is commensurate to its usefulness when cut down. The poles are floated to Canton on rafts, and sold as they lie in the water, for \$8 to \$16 per 100 according to size. The finer sorts, employed in making pencils and pipes, do not go abroad. Bamboo-ware, as chairs, screens, couches, &c., is largely exported, but no account of the amount or direction has ever been kept.

Brass Leaf. Building Materials. Bone ware. Borax. Braid. Camphor.

6. BRASS LEAF, or *tinsel*, called *tung poh* 銅簿, is manufactured by the Chinese to an enormous extent for making the *kin hwa*, or 'golden flowers,' used in worship. It is exported to India; a box is estimated to hold 50 catties.

7. BUILDING MATERIALS, 瓦磚 *yá chuen*, 瓦片 *yá pien*. This is much too vague a term, and ought never to have been suffered in the tariff. Bricks, tiles, stone, timber, &c., are included under this head; and except fine glazed tiles for balustrades, almost none are exported.

8. BONE and *horn ware*, called *kuh kí* 骨器 and *kioh kí* 角器. Small boxes, lanterns, paper knives, buttons, and many small carved articles of dress, are made from horn and bone. The ware has never paid duty, and the amount is trifling. Some of the work is neatly made, as the opium boxes and lanterns. The bones and horns of the buffalo, the teeth of the sperm-whale and walrus, are mostly employed.

BORAX or *tincal*, called 硼沙 *pang shá*, has long been used as a flux and enamel by the Chinese. It occurs in Ngánhwui and Kánsuh, but the lakes in Tibet furnish the largest quantities, both in solution in their waters, and in beds near their banks, whence it is dug for the Chinese and Indian markets. It is refined at Canton and in other large manufacturing cities, by the various workmen who use it; that in the shops is generally in impure, half-crystallized masses, in which state it is exported, chiefly to the Continent of Europe. The Chinese use it in glazing crockery and soldering metals, and as a flux in reducing the silex in glass, enamels, and other vitreous compounds.

BRAID, made from a bright light yellow-straw, like oat-straw, has recently been sent to the United States, where it is made up into summer hats. The hats are also made in Canton for shipment. The straw grows in Shántung and Chihlí, where it is woven in strips 300 to 350 feet long.

9. CAMPHOR, *cháng náu* 樟腦 is exported to England, Europe, and America; it is obtained from the *Laurus camphora*, a large tree which grows in Eastern China, Japan, and Formosa. The tree, including the roots, is cut into small pieces and gently boiled in a little water; the sublimed gum is received into inverted straw cones. It is granular, and of a grayish color not unlike coarse sugar, and is brought to market in small cakes; that from Japan is esteemed the best, though neither the Chinese nor Japanese have the art of refining it pure. In packing it, particular care should be taken that the boxes are sound, and the lead well soldered, otherwise its volatility will cause it to decrease materially; it is always wet a little before packing, to allow for loss by evaporation. It is carried on deck in tea ships, lest the odor injure the tea. Good camphor is strong and penetrating, of a bitterish aromatic taste, and when bitten imparts a cooling sensation to the mouth. The annual exportation to Europe

Camphor wood.	Canes or Whanghees.	Capoor Cutchery.	Cassia.
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and America from China has been about 3000 peculs; in some years, over 4000. Its price varies from \$19 to \$25, while Baroos camphor is about \$3000 per pecul. There is a kind of camphor much esteemed by the Chinese, which they extract from the leaves of a sort of labiate plant; the crystals are limpid and brittle, and present a brilliant fracture.

The wood of the camphor tree is solid and tough, and makes a good material for ship-building, trunks, boxes, &c., as the odor preserves it for a long time from insects. The wood that has been boiled is worth less than that taken fresh from the tree, but it is one of the best kinds of timber in China. Most of that brought to Canton is from Tsiuenchau fú and other parts of Fuhkien and Formosa.

10. CANES or *whanghees* 竹竿 *chuh kán* and 鞭竿 *pien kín*. These are sent to England for the umbrella manufacturers; they are usually of bamboo. Walking-sticks are sold to a considerable extent in Canton, made from many kinds of wood, as tea, orange, camellia, rose-wood, the roots of bamboo, &c. They are cut and carved with considerable taste; and when sent off should be carefully examined as to worm holes and dry rot, and that they are not injured by fire or steam. At Ningpo, canes and pipes are to be had, beautifully inlaid with ivory or mother-o'-pearl, and ornamented with silver.

11. CAPOOR CUTCHERY, *sán lái* 三籐; the Indian name means root of camphor. This is the root of a tuberous plant which grows in Fuhkien and Sr'chuen; it is half an inch and more in diameter, and is cut into small pieces and dried for exportation; the cleavage is covered with a fine reddish pellicle, but externally it is rough and of a reddish color. It is powdered and mixed with oil, and thus employed in friction and plasters; it has a pungent and bitterish taste, and a slight aromatic smell. It is exported in small amounts to Bombay, and from thence to Persia and Arabia, where it is used in perfumery and for medicinal purposes, and also to preserve clothes from insects.

12. CASSIA, or *kwei pi* 桂皮 is the decorticated bark of the *Laurus cassia*, a large and most useful tree, whose wood, bark, buds, seeds, pods, leaves, oil, are all in request for various purposes in carpentry, medicine, perfumery and cookery. It grows in all the southern provinces of China, especially Kwangsi and Yunnan, and also in Annam, Japan, and the northerly islands of the Archipelago. The bark is stripped off by running a knife longitudinally along the branch on both sides, and then gradually loosening it; after it is taken off, it is suffered to lie for twenty-four hours, during which time it undergoes a kind of fermentation, and the epidermis is easily scraped off. The bark soon dries into the quilled shape in which it comes to market. Thin pieces, having an agreeable spicy taste, a mucilaginous nature when chewed, a brownish red color, and a

Cassia Buds, sorts of. Cassia Oil and its uses. Cassia Fistula. Cinnabar.

tolerably smooth surface, are the best kind; the small and broken is inferior. It is easily distinguished from cinnamon, which it resembles, being smaller quilled, breaks shorter, and is less acrid and pungent. The cassia brought from Ceylon and Malabar is inferior to the Chinese, more liable to foul packing, thicker colored, and less aromatic. There is a kind offered for sale at Ningpo, which has no botanical affinity with the true cassia, but is obtained from a tree of the Magnolia family (*Drymis Winteri*), and its cheapness, \$3 a pecul, recommends it for common use. The Chinese cassia is sewed up in mats, usually two or more rolls in each mat, and a pound in a roll; it is shipped to Great Britain, Europe, and the United States, to the extent of 35,000 peculs annually, at the average value of \$15 per pecul.

Cassia buds, or *kwei tsz'* 桂子 are obtained from the same tree as the cassia lignea; they are the fleshy ovaries of the seeds, which are pressed on one end so that they bear some resemblance to cloves in shape. Those that are plump and fresh, possessing a fine cinnamon flavor and free from stalks and dirt, are the best. An article of the same name is also obtained from the cinnamon tree; and it is said on good authority that the true cinnamon tree grows in the south of Kwángsí. If the buds are packed in the same bundles with the bark, the flavor of both are improved. They are put up in boxes containing one pecul, for Great Britain and Europe, and some to India; upwards of 500 peculs at \$16 each, are annually sent to those quarters.

Cassia oil, 桂皮油 *kwei pí yú*, is obtained from the leaves and twigs of the cassia tree by distillation, and is used as a medicine, under the name of *oleum malabathri*. It is easily tested by putting it on the hand, where it will evaporate slowly, and any foreign substance in it will thus be detected. The leaves used to be exported under the name of *folia malabathri*. The manufacture of the oil almost ceased during the years 1842 and 1843, as was reported, on account of the expenditure of wood for fuel, but the demand for it ere long caused a resumption. There is not enough brought to market to supply the demand, even at the high price of \$200 per pecul, it has ranged at during the last few years. It is used in perfumery and flavoring condiments.

Cassia fistula, *kuai huá tsing* 槐花青, is the name for the long cylindrical pods of the senna tree (*Cathartocarpus*), which are collected in Kwángsí for their pulp and seeds, which are medicinal. The pulp is reddish and sweet, and not so drastic as the American sort; if gathered before the seeds are ripe, its taste is somewhat sharp. It is not exported, at least to any great extent, to the west of the Cape.

CINNABAR, or *chú shá*, 珠砂 is the sulphuret of mercury. The native is found in many localities in the central and western provinces; and also manufactured from quicksilver, by the reaction of

*China-root.**Chinaware or Porcelain, common and fine, painted and blue.*

sulphur and saltpetre on that metal in small copper furnaces, where it is collected after sublimation in acicular crystals. Cinnabar is employed by lacquered-ware makers to color lacker red, in painting, and the preparation of vermilion; considerable use is made of it in medicine.

13. CHINA ROOT, 土茯苓 *tú fuh ling*, or 冷飯頭 *lang fán tau*, is the root of the *Smilax China*, a climbing plant, found in Honan and Kwángtung. The roots are jointed, knobbed, thick, of a brown color, and break short; the taste is sharp and bitterish when cut, the surface is smooth, close grained and glossy, of a pale red color; but if old and wormy, dust flies from it when broken, and it is then worthless. The price varies from \$3 to \$4 per pecul. It is used extensively as a medicine by the Chinese, who also eat it for its nutritive properties; it is exported to India and Europe for the former purposes.

14. CHINAWARE or *porcelain*, 磁器 *tsz' ki*. The largest part of this ware now exported is of the cheaper sorts. When the productions of the East were first carried round the Cape of Good Hope, the fine porcelain of China bore a high price. Those finest specimens are no longer made, even in China, and the processes of manufacturing the ware having been ascertained, Europeans began to make it, and soon rivaled the Chinese. All the very finest ware is still manufactured at Kingteh chin in the northeast of Kiángsí. Much of the common blue crockery is made at *Pá-kwoh*, a village near Shih-má between Amoy and Chángchau fú, for native consumption; this kind is sent to all parts of the Archipelago, to India, Siam, and even finds its way to Central Asia. The pieces brought to Canton, except this blue stone ware, are white, and painted according to demand. The workmen sketch the design in India ink, and paint it over in water colors, mixed with strong glue. They are left in a reverberating furnace about half an hour, when they are taken out and cooled, and passed through cold water. These furnaces are made of fire brick of different sizes according to the pieces. That which is called Nanking porcelain, is ornamented with Chinese designs of heroes, and scenes in national war or plays, interspersed with quotations and flowers; it is usually much finer than the highly painted ware. Chinaware is sold in sets, more or less extensive in the number of articles; the painted ware is sold by the dozen pieces. A dinner set for 12 persons, consisting of 89 pieces, sells from \$62 to \$92; and a breakfast set of 70 pieces, sells from \$20 to \$35, according to the painting. A set for a large party, say 30 persons, of 276 pieces, is priced at \$175 for the blue Fitzhugh ware, and \$330 for the painted kind. A large complete tea set of 112 pieces, ranges from \$43 for the blue, to \$116 for the painted. At Ningpo, fine and ornamental ware can be procured rather cheaper than at Canton, but all the pieces suitable for a foreign table are not to be had. The export of fancy ware, such as vases, jars, statuettes of Kwanyin,

Oil of Cloves. Clothes. Copper Cash. Copper and pewter-ware. White Copper.

card-plates, fruit-baskets, &c., is large, but no separate account is kept. China still supplies other parts of Asia with table crockery; and about 6000 peculs also annually go west of the Cape.

OIL OF CLOVES, 丁香油 *tíng xiāng yú* This is procured by distilling cloves, and is exported from the Archipelago to a small extent; the Chinese prepare it for their own use, but the export is a mere trifle. If it is suspected to be adulterated, it can be proved by dropping into it spirits of wine, when the two will separate; or by setting it on fire, when the smell of any other oil will be detected. The white or pure is of a pale reddish-brown color, which gradually becomes darker by age. It is heavier than water, of a fiery, acrid taste; and generally well made.

15. **CLOTHES, í fuh 衣服** or **ching í 成衣**, are exported to the Archipelago and Siam to a great amount, for the use of Chinese emigrants. Ready-made garments of nankeen and grasscloth in European patterns, are occasionally sent to South America and India.

COPPER CASH, 銅錢 *tung tsien*, such as the Chinese use for coin, has been largely exported to India during the last five years, where it is melted up by the coppersmiths to make inferior brazen dishes and pans; trial shipments have also been made to England. This coin should rightly consist of pure copper, and each one weigh a mace, but such has not been the case for many years; sand, iron, tutenague, or tin, are thrown in to debase it, so that the coins of different provinces vary in their intrinsic worth. The annual export to Calcutta and Singapore has been about 32,000 peculs, at the average of \$10½ per pecul. Large, selected cash are also taken to Bali and Lombock for purchasing rice, whose inhabitants use it as their principal coin.

16. **COPPER-WARE, 銅器** *tung kí*, and **PEWTER-WARE, 錫器** *seh kí*. Copper has been known from the earliest ages among the Chinese; Wúcháng fú in Húpeh, Tungchau fú in Shensi, Lin-ngán fú in Yunnan, and Kweichau province, furnish the most productive ores, principally that of a sulphuret. It is obtained by melting the ore in a furnace filled with charcoal, and drawing off the metal, which is again refined by those who use it. The copper of China is not as pure as that from Japan or Cochin-China, and copper utensils are not used to much extent by the Chinese; the manufacture of debased cash, gongs, brass foil, locks, bells, hinges, boxes, censers, statuettes, hand-stoves, plates, ferules, &c., consume most of the native copper. A few articles are exported to India, and some blue enameled washbowls, plates, ewers, &c., prettily painted, are also sent beyond the Cape.

White Copper, or peh tung 白銅 is an alloy of copper from Yunnan, peculiar to China; chemists disagree as to its constituents, zink, arsenic, iron, nickel, and silver, and even tin and lead, all having

Corals. Crackers and Fireworks. Cubebs. Curiosities peculiar to China.

been found in it by them. The researches of M. Rondot have shown that the Chinese melt together 10 parts of an ore called *peh tung*, 2 parts of another called *hung tung* or red copper, which appears to be an arseniate of nickel, and 2 of zink, and their product is white copper. It is evident, therefore, as the constituents themselves are so variable, that the quality of the white copper should vary. The dish-covers, censers, and lamps, when new shine like silver. There is a baser alloy, called *kiá peh tung* 假白銅, which is made into small articles to a much greater extent; it contains tin or nickel, and is of a dull bluish white. The exportation of all these articles is small, and generally to the Archipelago, Siam and India, for the use of Chinese and Malays.

17. CORALS, *tú shān hú* 土珊瑚. To India entirely; a box is here estimated to weigh a pecul. The export is the merest trifle for ornaments chiefly.

18. CRACKERS and FIREWORKS, 包竹 *páu chuh*, 響爆 *hiáng páu*. The first are made of gunpowder rolled up like cigarettes, the inner envelop being of coarse bamboo paper, the outer of red paper, that being the happy color among the Chinese. They are thought to drive off noxious influences and evil spirits, by the people in the southern provinces, and their use is associated with idolatrous worship. They are made near Fuhshán; strings of 80 crackers are put up in square packets of 100 each, and packed in boxes of 40 packets. The larger sort of fireworks, as Roman candles, fuses, wheels, &c., of which the Chinese have a great variety, is seldom exported. The largest proportion of fire-crackers goes to the United States; some are shipped to South America.

19. CUBEBS, *ching kiá* 澄茄 or *pih ching kiá*, 畢澄茄. These are the fruit of the *Piper cubeba*, a vine growing in China, Java, and Nipál, and resemble pepper-corns so closely, that externally they are only distinguished from them by a process on that side by which they were attached to the stalk. Cubebs have a grayish-brown color, with a wrinkled pericarp inclosing a single seed, and a warm, pungent, slightly bitter taste, with a pleasant, aromatic smell. The heavy, plump fruit is the best; and if not ripe when gathered, the seed is soft and much wrinkled. Cubebs are valued in this market from \$18 to \$20 per pecul; the best sort comes from Java, and those from China go wholly to India, packed in strong, tight boxes of a pecul each.

CURIOSITIES; *antiques* are 古董 *kú tung*. Under this general term is included a variety of articles, valued for showing the peculiar workmanship of the Chinese, and regarded as rarities elsewhere. Hardly a ship leaves the country without some of them, but no list can be kept of their amount or sorts, nor is it necessary to do more than to enumerate some of the most common. Lanterns of horn, glass, silk, and paper, both painted, plain, carved and tasseled, some of them very beautiful and gaudy, are made in Canton; the "horse-

Dyestuffs. *Fans and Fire-screens of leaf, paper or feather.* *Fishlines.*

racing lanterns" are among the most ingenious. Works in jade and other kinds of gems and stones, as bowls, cups, rings, and pots, cut from a single piece; frames with trees, inscriptions or figures of stones set in a paste or inlaid in a board, and seals of many kinds, exhibit the patient labor of the workmen. Specimens of antique or rare porcelain are much sought after by the Chinese, and they pay high prices for old pieces. Carved work in horn, stone, roots, metal, gem, and wood, are more prized by the foreigner; and the variety has much increased lately. All these are procurable at various shops in Canton, especially some in Physic St. (Tsong-mo kái). At Amoy, the woven pictures, carved olive seeds, ornamental stone-vases and jars, statuettes and images in copper, earthen-ware and wood, bronzes and mirrors, are sold, as they are also at Fuhchau and Ningpo. The shops at the latter city also exhibit many fine carved frames, works in pearl, naker and ivory, and the curious composition stone vases. It is of course impossible to estimate these articles of *vertu* and art, but the annual exportation is probably over \$120,000 to all parts.

DYESTUFFS, 染料 *yen liáu*, have been sent to England on trial, but the trade is still experimental. Blue dyestuffs and a sort of bark have been shipped from Shanghai; blue is the favorite color for dress, and there are four or five plants cultivated in different provinces for this dye, *viz.*, three species of *Polygonum*, an *Indigofera*, and an *Isatis*; besides the extensive manufacture of Prussian blue. The internal trade in this blue coloring stuff, turmeric, cochineal, *shú liáng*, hartall, and other dyestuffs, is very great.

20, 40. FANS, FIRE-SCREENS; feather fans, 毛扇 *máu shen*; paper fans 紙扇 *chí shen* or 扇子 *shen tsz'*; silk screens, 絹扇 *kiuen shen*; palm-leaf fans, 葵扇 *wei shen*. These are made of paper, silk, leaf, feathers, and lackered-ware, and carved ones of ivory, sandal-wood and bone. The embroidered screens of silk or grass-cloth are beautiful specimens of skill, having the same picture on both sides; painted ones of paper or sarsnet are made in imitation. The feathers of the heron, goose, argus and other pheasants, cock, and dove, are all used for fans, often prettily painted, gilded, or dyed, and made open or folded. Those with lacquered frames often have the figures on the silk painted, with faces of ivory. It is needless to describe the vast variety of fans used among the Chinese, for only a few of them are exported. Those sent abroad are chiefly plain palm-leaf, with bamboo handles, 500 in a box; painted and plain silk fire screens are sent to America; paper and feather ones are not so often shipped.

FISHLINES, 魚絲 *yü sz'* are made of silk threads, neatly twisted, and put up in single lines, 80 to 120 feet long. Bamboo fish-poles cut into four different lengths, the smaller running into the larger, are also made in a workmanlike manner to resemble a walking-stick.

Furniture. Galangal. Gamboge. Glass and Glassware. Glass Beads.

21. FURNITURE, 雜木器 *tsáh muh kí*. The fancy furniture made at Shanghai and Ningpo, with inlaid figures and scenes in ivory, has latterly been shipped to a considerable amount; and since the Chinese at Canton have been furnished with patterns, they have produced fine specimens of carved black-wood (*swán-chí muh* 酸枝木) furniture in foreign styles for exportation; tête-à-têtes, sofas, tables, étagères, and other pieces, are made to order. The cabinet work of the Chinese carpenters is chiefly made of rose-wood, camphor, knot-wood, iron-wood, pride of India or Chinese mahogany, and pine; the workmanship is creditable, but their veneering is poor, partly owing to the inferior glue.

22. GALANGAL, or *liáng kiáng* 良薑 *i. e.* mild ginger. This root is obtained from the *Maranta* (*Alpinia*) *galanga*, which grows in Shansi, Fuhkien, and Káu-chau fú in Kwángtung. The greater or largest roots are often tough and woody with a thin bark, and full of knobby circles on the outside; bitterish, less aromatic, and less valuable than the smaller, which is of a reddish brown outside, and pale red within. The roots are rarely over two inches in length, and hardly half an inch thick, extremely firm, though light. The best is full and plump, has a bright color, a hot, peppery taste, and an aromatic smell. It is used in cookery and medicine among the Asiatics for its stimulating properties. It is exported chiefly to India; and not a little to Europe.

23. GAMBUGE or *tang huáng* 藤黃 *i. e.* rattan yellow; the name is derived from the country Camboja. The tree (*Garcinia cambogia*) is also found in China and Siam, and the gum is brought from Bangkok and Saigon in junks. The juice is obtained by tapping the tree and drying it in the sun; the rolls have a brownish-yellow color and a smooth surface. If when rubbed upon the wet nail the color be a bright lemon, and no grittiness be felt, it is good: when burned the flame is white, and the residuum a grayish ash; the fracture is vitreous; it has no taste and very little smell. The large, gritty, dark colored pieces are inferior. Gamboge is used as a pigment and as a powerful medicine; and is exported from China and Singapore, west of the Cape, inclosed in stout boxes each containing a pecul.

24. GLASS and glassware, 玻璃片 *po lí pién*, and 玻璃鏡 *po lí k'ing*, of Chinese manufacture is exported to a small amount. The chief articles are hand looking-glasses, sconces, a few chandeliers, glass lanterns, cheap table-ware and toys, which go to the Archipelago and Siam, and a few to India. The glass of the Chinese mirrors is thin, and the reflection so imperfect, that they are sent chiefly to Malaysia and India, where the people cannot afford to buy the European article.

25. GLASS BEADS; 草珠 *tsáu chú* and 土珠 *tú chú*; they are sent wholly to India or the Archipelago; those sent to Bombay are partly reshipped to Africa in exchange for ivory.

Glue from hide and fishes.

Gold in bullion and leaf.

Grasscloth.

26. GLUE or *niú pí kiáu* 牛皮膠; fish-glue 魚膠 *yú kiáu*. The first is made from ox-hides by boiling them to a jelly, but it is not so tenacious as the Irish glue. Fish-glue is made from the sounds and the noses of some sorts of fish, among which two species of the *Polynemus*, or binni carp, affords it. Cowhide glue comes to market in brown rectangular strips, a foot long; the export is chiefly to India. Fish-glue is prepared in thin, diaphanous sheets for use in cookery, in the preparation of india ink, in cabinet work, and painting on porcelain, and the manufacture of water colors, and to a great extent in the silk trade, to give a lustrous surface to satin and silks.

GOLD 金 *kin*. This metal is brought from Borneo and California as dust, and in impure masses. The Chinese counterfeit their ingots either by coating them with a thick crust of gold, and making the inside of silver or of copper; or by introducing lumps of lead or other metals into them. Its purity is ascertained by means of the touchstone, a kind of obsidian or black jasper, which gives a different colored mark when the gold is of unequal purity. This is called a touch, and the color shows the proportion of pure gold. Needles for comparison are also made of different proportions of alloy, by which the stone is rubbed at the same time with the gold. To express the fineness of gold, it is divided into 100 touches; if the gold is 96 touch, it has four parts of alloy. The Chinese are very expert in the use of the touchstone, the touches have each a separate name, and usually the shoes are shaped differently to distinguish them. The recent importations of gold into China have reduced the proportionate value of gold and silver to 1 to 14½. The range of the touches is between 70 and 100. Gold leaf is made by the Chinese in great quantities, and is used for gilding the wood-work of houses, sedans, &c. It is not so thin, or as evenly made as at the west; the leaves are about three inches square. Gold leaf is largely exported to India.

27. GRASSCLOTH, or *hiá pú* 夏布 *i.e.* summer cloth; the 麻布 *má pú* includes hempen fabrics. The term *grasscloth* has been justly criticised as totally inapplicable to this beautiful fabric, and one of those terms, like rice-paper, joss-sticks, betel-nut, or terra japonica, which are heedlessly adopted into the English language, there to perpetuate errors respecting the things designated. The researches of the French Delegation have shown that at least four plants furnish the fibres for *hiá pú*, the *Urtica nivea*, the *Sida tiliæfolia*, a *Cannabis*, and the *Dolichos bulbosus*, all of which are cultivated. The first makes the finest sort, and is that which, bleached and unbleached, coarse and fine, clothes so many Chinese in the southern provinces. There are many varieties of *má*; the *po-lo má* is a substantial material, woven from the fibres of a *Corchorus* or *Sida*; a piece of 40 yds. costs \$1½ to \$3½; the prices of *hiá pú* vary from 8 cents up to \$1.20 per yard. The exportation of all these fabrics is small, as

*Hartall.**Ivoryware and Ivory Concentric Balls.**India Ink.*

they are less durable than linen; the principal portion goes to India and America in the form of handkerchiefs. Raw hemp has been sent to Europe in small lots.

28. **HARTALL** or *orpiment*, *shih huáng* 石黃. This is a native sulphuret of arsenic, and appears in different forms; it is said to come from Mang-hwá fú in Yunnan, and is used as a coloring drug and in making depillatory soaps. Native orpiment sometimes occurs in compact amorphous pieces, at others composed of thin plates of a lively gold color, intermixed with pieces of vermilion red, of a shattery foliaceous texture, flexible, soft like talc, and sparkling when broken; when burned, it exhales much sulphureous smoke. About 300 piculs are sent to India, Mexico and Holland, at \$10 to \$12 each, in pecul boxes.

29. **IVORYWARE**, 牙器 *yá ki*. The unsurpassed carving of the Chinese in ivory, and the cheapness of their articles, causes a large sale to all parts of the world. Those specimens of patient toil, the carved balls, containing from 3 to 24 interior balls, are made out of the most perfect and solid pieces of ivory. The piece is turned to an exact sphere, and then fourteen conical holes are cut into its body, all converging and meeting in the centre, by means of drills working to a guage, so that each hole will be of the same depth. The centre being dug out, the mass of ivory is fixed by wedges, and a line is drawn inside of each hole, at the same distance from the surface; and the workman cuts into this line with chisels working on a pivot passing from one hole to the other until the incisions meet and the central sphere is loosened. Its faces are then turned over and smoothed or carved with proper tools; when another line is drawn nearer the surface, and a second sphere loosened and completed as the first. In this way all are done, until the last globe is cut and carved; the largest sized balls occupy about three months' labor, and sell at \$13 or \$25, according to the carving. Sometimes elaborate and beautiful objects are executed in ivory; as family boats with all their oars, kitchen, furniture, and gear complete, and pigmy boatmen at the oar; pagodas of nine stories, windows, bells and turrets all imitated; trees with monkeys, birds, and leaves in profusion upon their branches; landscapes, with dwarfed houses, boats, animals, and other things, all in an area of a square foot;—these and other productions of Chinese skill, severally show also the peculiar style of their art. Fans, seals, combs, card-cases, fruit or fancy baskets, billiard balls, puzzles, memorandum tablets, sheets for painting miniatures, paper-knives, many styles of chessmen, &c., &c., are yearly exported to the United States, India, South America, and Europe.

INDIA INK, 墨 *meh*, is composed of soot and glue, perfumed according to the quality of the ink. The soot is collected by burning the twigs and leaves of pine under movable boards, properly arranged to catch the smoke as it rises. The finest ink is manufactur-

Joss-sticks.

Kittysols or Paper Umbrellas.

Lackered-ware.

ed from the product of oil slowly burned in earthen jars, and collecting the soot on the sides of the upper one. It is brought to Canton from Kwángsí in hampers, and manufactured both into writing and printing ink. It is dissolved in boiling glue, and then stirred about in a jar until entirely mixed; after it has cooled a little, it is pressed into wooden molds, into which a stopper fits tightly; the cakes are soon taken from the molds and dried, the impression of the carving on the wood coming out distinctly. The musk, or other substance used as a perfume, is mixed in the glue. The finest India ink comes from Hwuichau fú in Ngánhwui; the glue is made from ass-skin; its fracture is shining, and no grittiness can be perceived when rubbed on the finger nail; inferior sorts are usually the most ornamented. Ink is made in oblong prisms, weighing from 5 to 80 per catty; the finest is priced as high as \$5 a catty, common sorts range from 40 cents to \$1.50. The boxes usually contain 100 cakes; the export is to Europe. Printing ink is not exported. The soot is mixed with strained congee, and when the paste is properly dried, it is kneaded on a slab, and cut into strips like wrought nails; the printers dilute it in oil as they use it, laying it on the blocks with a brush of bark.

JOSS-STICKS, 時辰香 *shí shin hiáng*, are sent abroad in small lots as a convenience for segar-smokers. They are made of the dust of cedar and fir, mixed with just enough clay to make it stick, and when lighted burn so slowly and regularly that the Chinese often use them to mark the divisions of time. They come in sticks a cubit long, and must be packed perfectly dry.

30. KITTYOLS (from the Spanish *quitasol*) 雨遮 *yú ché*, are umbrellas made of bamboo frames covered with black or brown oiled paper. The best are made in Húnan, and sell at \$25 a 30 per 100, while the Canton kinds range from \$7 a 12 per 100, according as they are painted and guarded by rattan. They are sent to the Archipelago and India in pecul boxes containing 100 umbrellas each. The silk umbrellas are of different degrees of excellence, costing from \$1 a \$3½ apiece; they go chiefly to South America. Considering the material they are made of, this sort of parasol (for their use is for the most part as a protection against the sun) wear a long time, and the Malays, Siamese, and other people in SE. Asia depend chiefly upon China for their supply.

31. LACKERED-WARE, 漆器 *tsih kí*. The varnish used in making lackered ware is extracted from a species of sumac, (*Vernix vernicia* Lour.) which grows best in Kiángsí, Chehkiáng and Sz'chuen; it is drawn from the tree in summer nights, exuding slowly into shells, and is brought to market in a semi-fluid state, or dried into cakes of a whitish color, worth from \$40 a \$100 per pecul. When prepared for use, 5 catties of lacker, 10 of spring-water, 5 taels of ground-nut oil, 2 pig's galls and 4 taels of vinegar, are mixed together until they form a pasty mass of a lustrous black. These ingredients are used

*Sorts of Lackered-ware exported.**White Lead.**Red Lead.*

other proportions for inferior sorts. The wood should be well seasoned and planed, and the grooves covered with *shú chí*, a kind of tough paper, or the lint of hemp, rubbing it on with a size made of pig's gall, pure or mixed with fine red sand, as a priming, until the wood is uniformly coated. The article is then placed in a dark room, and a coating of the prepared lacker laid on with a brush, and put by to dry. These coatings are repeated from three to fifteen times, according to the fineness of the ware. When perfectly dry, the articles to be gilded are sent to the proper workmen, whose first operation is to draw an outline of the design in white chalk or lead, or by scratching the surface. It is then painted in lacker mixed with vermilion, repeating the layers where a raised surface is required. The gold in powder is put on with a cotton bat, the gold leaf with a brush, the most delicate strokes being made over it with charcoal smoke floating on oil, with fine hair pencils; sometimes camphor is used in the red priming to set the gilding. This ware was formerly exported in considerable quantities, but partly owing to the liability to injury on the homeward passage, and being superseded abroad by other things more substantial, the exportation is now under \$25,000. The articles exported consist of fans, waiters, chess-boards, work-tables, segar-boxes, tea-trays, teapoys, &c. The patterns worked on them affect their sale, and the least scratch spoils the varnish. There is a kind of fancy lackered-ware made by mixing the varnish with cinnabar, and laying it on the wood a fourth of an inch thick or so, and then carving figures in relief in this metallic paste; the pieces are small and costly, and admired chiefly as curiosities from their delicate carving. The manufactories at Súcchau produce finer specimens than at Canton. The lackered-ware made by one or two establishments at Fuhchau, should be noticed; the pieces resemble the Japanese in lustre, from whom the workmen are said to have had some instruction.

32. LEAD, *white*, or *ceruse*, 鉛粉 *yuen fan*, is made chiefly at Canton. Sheet lead is put into large jars with vinegar obtained from samshoo, and a cover luted on; a slow fire is kept up for a month, changing the vinegar if necessary, until the lead is entirely carbonized. The powder is then levigated, dried, and pressed into cakes of a snowy whiteness; it is often adulterated with gypsum, lime, or flour. It is used in cosmetics, and when mixed with wood oil, as a common paint, which soon turns a dingy gray; the exportation is trifling, but considerable quantities are bought by captains of ships for their own use.

33. LEAD, *red*, or *minium*, 紅丹 *hung tán*, or 鉛丹 *yuen tán*, is made by continued calcination of lead into massicot, and then into minium. It is very pure, and is used by glass-makers and painters; care must be taken in buying, that it is not mixed with oxide of copper. The exportation is insignificant, nor is the native consumption great.

Marble Slabs and Tiles. *Matting.* *Mats.* *Mother-o'-pearl Ware.*

34. MARBLE SLABS, 雲石 *yun shih* or 花石片 *hwá shih pien*. The slabs are about an inch thick, and from 12 to 30 inches square. The kind most commonly exported is a coarse-grained, blue clouded, primitive limestone, quarried in Sháu-king fú, northwest of Canton; it is used for floors and pavements. A coarse whitish marble, veined and clouded with epidote or ore of manganese, is common; it is used in tables and in the backs of chairs; if the veins resemble a tree, a hill, or animal, the value is greater. The demand for carved furniture has increased the supply of the red breccia marble for table tops, seats, &c.; and shopmen easily furnish pieces six feet long. It is brought from Fuhkien, and is seldom sent abroad in slabs. Ten slabs of the blue kind are estimated to weigh a pecul.—Tiles of various sorts have in some seasons been largely exported. The large earthen tile is about 15 inches square, and is used for the same purposes as the marble slabs.

35. MATTING, 草蓆 *tsáu sih*. A very tall grass (*Arundo mitis*) much used in the manufacture of mats, is cultivated in the lowlands in all the south of Kwángtung, but the people weave them of other grasses throughout the land; this department of labor employs myriads of workmen. The culms of the *Arundo* are sometimes five feet high, but the rolls are seldom more than four feet wide. The loom is an upright framework, with a cylinder above and below, over which the warp runs; the woof is woven in without a shuttle. The red dye is made by sapan wood. The kinds commonly exported to the United States and South America are plain white or red checked; they are put up in rolls containing 40 yards, measuring 1 yd., 1½ yd., and 1½ yd. wide, and each one should be packed dry. The thin matting used for sails and for covering boxes is woven from the *Coix lachryma*.

MATS, 竹蓆 *chuh sih*, made of bamboo splints, are woven in different ways and degrees of fineness, chiefly for home consumption. The sort which covers the tea-chests brought from the country resembles coarse basket-work; other varieties, as door-screens, window-blinds and curtains, are made of fine splints, connected by thread, and often exhibit prettily colored figures on a green ground. Table mats for exportation are woven of rattan. The most durable grass mats come from Lientán near Ningpo, in pieces 6 ft. long by 4 ft. wide; the whole exportation is very trifling.

36. MOTHER-O'-PEARL WARE, 雲母殼器 *yun mú koh kí* is exported in small quantities; seals, fish-counters, card-cases, fan and screen handles, rosettes, silk-winders, and other knickknacks, are among the articles. The fragments and inferior shells are consumed in making pearl buttons, of which most of the export consists. No data as to the amount of the exportation are available, and the ware (except the buttons) is carried away in small parcels. The delicate carving on this intractable material, and the skill exhibited in making the pieces, render this ware always in demand, and good shells sell readily.

*Mode of proving Musk.**Musk Seed.**Nankeens of two sorts.*

37. MUSK, 麝香 *shíe hiáng*. Genuine musk is rare and costly, on which account it is often and much adulterated. It is found on a bag near the navel of an antelope (*Moschus moschifera*) inhabiting Tibet, Yunnan, and Sz'chuen; but it is probable that musk is obtained from several kinds of deer in the central parts of Asia. Good musk is of a dark, purplish color, dry and light, and generally in smooth, unctuous grains; when rubbed on paper, the trace is a lively yellow, and no grittiness is felt or residue left, its taste is bitter, and its smell strong and disagreeable to many persons. The true bags weigh about 25 grains, when well prepared and dried; they are often counterfeited by those of skin, but these have a paler color than the true, and the hair is uneven. The degree of purity and strength of this drug can be ascertained by macerating it for a few days in spirits of wine, to which it imparts a strong scent. Musk is often adulterated with a kind of brown unctuous earth, heavier than the real secretion, or with clots of the animal's blood; and every bag should be opened. An inferior sort is sold at Shánghái, having gray, large grains, and the hair nearly all removed from the bags. The average exportation is about 1200 catties, at \$60 a catty, but none passes the custom-house. It is used for perfumery and medicine. An inferior sort is found in the Indian markets, and a still baser kind is brought from Russia.

MUSK SEED. These are the fruit of the *Hibiscus abelmoschus*, which grows in China and other countries. The Arabians use them to give flavor to their coffee; the powder is used in perfumery. The seeds are flat, kidney-shaped, about the size of a large pinhead, and have a considerable odor of musk, with a slightly aromatic, bitterish taste. The black and musty seeds are not good; a grayish color is the natural one. They are now carried to Europe from Ceylon and South America.

33. NANKEENS, 紫花布 *tsz' huá pú* or 赤布 *chih pú*. This cotton cloth is so named by foreigners from Nanking, where the manufacture is said to have begun. It is woven from the reddish cotton grown in Kiangnán; the looms of Kiangsú produce the best. There are many varieties and qualities, not easy to describe; those manufactured in Canton and Fuhkien are of an inferior quality; but the Chinese article still maintains its superiority in color and texture over the imitations of other countries. The Chinese fabric can be proven by plunging it in a boiling solution of campeachy wood, which does not change its hue, while the foreign turns violet. The price varies from \$45 to \$90 per hundred pieces; they are about 7½ yds. long by 15 inches wide, but are woven about 75 yds. on one loom. There are several varieties of the cloth. This cloth is much worn by the Chinese themselves, who usually dye it blue. The exportation is now less than it was fifty years ago, and almost wholly to the United States and England, although small quantities find their way elsewhere.

Nut-galls. Oils. Paints in boxes. Pictures on pith paper, ivory, and in oil.

NUT-GALLS, *wú pei tsz'*, 五貝子 come chiefly from Siúchau in Kwángs', produced by insects upon a tree called the *yen fú*, probably an oak; they are oblong, rough and tubercular, the shell hard, brittle and gummy, and the hollow centre has a cottony ball, the covering of the pupa or the perfect insect. They are used alone to a large extent to dye silks black, or mixed with cochineal and other colors to produce gray, brown and fawn. They are exported to Germany.

OIL is exported by native vessels to the Archipelago. The oils mostly used by the Chinese are camellia-oil 茶油 *chá yú*, ground-nut oil 花生油 *huá sang yú*; sesamum oil, 芝麻油 *chí-má yú*; and wood oil 桐油 *tung yú*. The three first are used for lamps and cooking, the last for smearing wood and in painting. Castor-oil, rape oil, and cocoa-nut oil, are also made, and a few animal oils. The exportation of the oils, or of the cakes left after pressing, is trifling.

PAINTS, *shih siáng* 色箱, are put up in boxes in a very neat manner, and a few are sent abroad. They are of different sizes, the largest presenting a collection of sixteen colors, both in cakes and in powder, with a complete assortment of pencils, a bit of fine glue, India ink, a mortar and pestle, cups and saucers, all arranged compactly. Great care and experience are needed in selecting boxes of paints, as the colors are often mixed with gypsum, or otherwise simulated.

39. PICTURES; oil paintings, 大油漆畫 *tá yú tsih huá*; rice paper pictures, 薄紙畫 *tung chí huá*. There are many shops in Canton, Whampoa, and Hongkong, where maps and charts are copied, and a few where portraits are well taken. Portraits, landscapes, and scenes in oil, are made in large quantities, priced from \$3 to \$100 apiece; pictures and engravings are accurately copied, and some of the views and Chinese landscapes are well drawn. The paintings on pith paper (or rice paper, as it is erroneously called) are well known. The material is the pith of an araliaceous plant (*Æschynomene paludosa?*) brought from Yunnan and Fuhkien, in leaves or in its original state. After soaking a while, it is cut round and round into sheets by sharp thin knives, and pressed smooth. The largest sheets are over a foot square, and all the best are used for painting on, the refuse pieces being employed by the makers of artificial flowers. The copying of miniatures or engravings on ivory also forms a branch of industry of some importance; and the finer specimens of work of these artists are very beautiful. Outline designs in India ink, of the crafts and professions among the Chinese, are sold in books at a cheap price, and some of them are admirably designed. Of all these the number annually carried away is very great, and their manufacture furnishes employment to hundreds of workmen.

Writing Paper. Pearls, real and false. Preserves, Jellies, and dried Fruits.

41. PAPER 紙 *chi*. There is no need of describing the preparation, and noting all the numerous sorts of paper made by the Chinese out of bamboo, mulberry, hibiscus, cotton, hemp, refuse cotton, and rice straw, or detailing the uses to which they are applied. Such paper as this book is printed upon is made from the macerated pulp of the young shoots of bamboo, soaked, pounded, and digested to a solution of uniform consistency, and then taken up in large molds; the sheets are sized by saturating them in a solution of alum mixed with a little glue, and dried by rubbing them on smooth boards or a warm plastered wall. The exportation to India and the Archipelago is principally of this kind. That sent to Europe for taking India proofs of engravings is the same sort, unsized. It is glazed for writing paper by waxing the sheet, and afterwards rubbing it with a smooth stone; two and three sheets are made into one thick sheet for ledgers or other account-books, by the same process, after wetting the inner surfaces with glue water, and drying the sheet in the sun. The thin paper, called Nanking paper, manufactured from cotton, is tougher and more flexible than the bamboo paper, but it is not sent abroad. The oiled paper in which silk and other goods are wrapped, is chiefly made of cotton in Kiángsú, and is superior to the bamboo oiled paper of Canton. The consumption of Chinese writing paper is great in this part of the world, on account of its cheapness and from not being injured by the climate; foreign paper sized with glue being liable to spoil.

42. PEARLS, *kiá chú* 假珠 and 草珠 *tsau chú*. These are artificially produced, by a curious process of inserting a substance inside of the living shell, around which the fish deposits the nacreous pearl, to remove the irritation of a rough, foreign substance. Ningpo is the principal mart for their export. False pearls are also made artificially of glass and of fish glue to a large extent. The Chinese ladies use them in strings upon their heads, and also as a setting on headbands, necklaces, &c. False pearls are packed in pecul boxes, each containing 100,000 pearls, and are exported altogether to India and the Straits, where they are used by the natives for ornaments.

43. PRESERVES, 糖薑 *táng kiáng*, and 糖菓 *táng kwo*. The Chinese candy many things which are not considered fit for such purposes elsewhere, as millet seeds, bamboo shoots, slices of the lily root, &c. The most common sweetmeat exported is made of the tender roots of the ginger plant; when good it has a bright appearance, a dark red color, and small pieces are somewhat translucent; if the roots are old, the preserve will be stringy, tough and tasteless. The jars called *chowchow* sweetmeats, contain a variety of roots and fruits boiled soft. Other kinds of conserves and jellies, as whampee, guava, and pear, citron, custard-apple, kumquat, oranges, &c., &c., are also sent abroad. The jellies are mostly made of pears, whampee and mangoes, put up in gallipots, 24 in a case. The syrups are

Quicksilver. *Rattan-ware.* *Split Rattans.* *Rhubarb, cut and uncut:*

in bottles, 12 in a case. The dried fruit usually called dates, 棗 *tsáu*, forms a large article of inland commerce among the Chinese. They are the jujube plum (*Zizyphus*), and are prepared by slitting the skin and drying them in honey; they are put up in tubs. Dried laiches are prepared by exposing the ripe fruit to the sun or artificial heat; those which are good look withered, while the poor and wormy ones are generally plump. Neither of these are exported in foreign vessels, but persimmons dried and prepared like biffins, are sent abroad in junks to Siam and the Straits in great quantities, under the name of dried figs.

QUICKSILVER sometimes forms an article of export; when the price of the foreign exceeds \$100 per pecul, the native can be brought to market. Mines of cinnabar are opened in the western and central provinces, and pure quicksilver is collected in Kweichau and Honan. It is very pure, and comes to market in stone jars, or inclosed in the internodes of bambóo. In 1844, '45 and '46, the total export of this metal was nearly 1000 peculs, at an average of \$121 per pecul. Fifty years ago it was sold in Canton at 35 to 40 taels per pecul.

44. RATTAN WARE, 藤簾 藤蓆 藤貨 *tang lien, tang sih, tang ho*. Table-mats are made in sets of six each of different sizes, or in full sets of 30 for a dozen plates. Other sorts of rattan ware consists of chairs, baskets of many shapes, open and covered, and with compartments, and other small articles; chairs and chair-seats, and strips for cording, consume more than all the fancy ware exported; next are ropes and the large mats in which the people wrap their bedding.

SPLIT RATTANS 藤條 *tang tiáu*, are made by hand, cutting the whole rattan into threads of different sizes, first by running a knife through it slowly, and afterwards reducing the strips to threads by pulling them through holes in an iron plate. The labor of making them of a uniform size is considerable, and is done mostly by women and those who weave table mats. The export to United States is steadily increasing.

45. RHUBARB 大黃 *tá huáng*. This drug is the dried roots of several species of *Rheum*, especially the *palmatum*, which furnishes the best, the *rhaponticum* and the *rhobarbaricum*, all of which grow in Siberia, Tartary and China; from Central Asia, it is carried to St. Petersburg and Smyrna. The rhubarb from Kiakhta is collected in Western Kansuh, Koko-nor, and along the slopes of the Kwanlun Mts., while that sold in Canton is gathered in Sz'chuen, Shensi, and Eastern Kansuh; the varieties known in commerce depend on the age of the root, the soil, and care used in curing it. The Chinese dig the roots early in the spring, before the leaves appear, cut them into long flat pieces; dry them for two or three days in the shade; and then string them on cords to dry thoroughly in cool places. Rhubarb is often spoiled by moisture in drying, when

*Sea-shells, dried Insects, and Minerals.**Raw Silk, Nanking and Canton.*

it becomes light and spongy; it is liable also to be eaten by worms. Good rhubarb is yellowish, of a firm texture, when cut has a lively, reddish, white mottled appearance, and is perfectly dry. The taste is bitter and unpleasant, and the smell somewhat aromatic. If when chewed, it becomes mucilaginous, it is not good; it also imparts to the spittle a deep saffron tinge. If black or green when broken, it ought to be rejected, as the good is slightly wrinkled, feels solid, and the fracture is clean and veined, and crisp to the teeth. The price of rhubarb varies from \$38 to \$40 per pecul for those roots cured without splitting; and \$50 to \$65 a pecul for the cut. Upwards of 1500 peculs are exported to England, Europe and the United States.

SEA SHELLS, 螺殼 *lo koh*; insects 虫類 *chung lui*. The shores of the islands of the Indian ocean afford many beautiful and rare shells, which are brought hither in junks, and from the islands along the coast. The assortment of shells for sale in Canton is not so great as might be inferred from the quantities exposed, but by a little search and careful selection, one can easily collect a few score of species, mostly salt water sorts, as well as some dried fish, like the didodon, hippocampus, or pegasus. Few fresh water or land shells are collected, and all of them are injured by scraping and varnishing. Beside shells, as objects of natural history, insects are also procurable at Canton, but badly preserved, the antennæ, palpi, and feet are often broken, and the specimens too crowded in the boxes; they are mostly beetles and other coleopterous insects; butterflies and other sorts are also gathered, especially those species which are gay. Precious stones are seen in small quantities, but rather inferior; chrysoprase, malachite, cornelians, emeralds, and jade, are the most common. Other minerals, especially limestone and quartz, are cut into fantastic shapes; but these specimens being usually lackered, are spoiled for natural objects. Lizards, newts, crabs and other crustacea, plated fishes like the didodon or star-fish, are not unfrequently contained in the boxes. Notwithstanding these deficiencies, owing to the pretty and variegated appearance of the crowded boxes, both shells and insects, their exportation amounts to many hundreds annually.

46. SILK. Nanking raw silk 湖絲 *hú sz'*; Canton raw silk 土絲 *tú sz'*; refuse silk 天蠶絲 *tiên tsán sz'*; organzine, *hú sz' king* 湖絲經; ribbons, *sz' tái* 絲帶; thread 絲線 *sz' sien*: satin, *sz' twán* 絲緞; crape, *tsau shá* 縐紗; gauze 紗 *shá*; lustring, 絹 *kiuen*; pongee, 綢 *chau*; velvet, *tsien jung* 剪絨; crape shawls, *tsau-shá táh pok kin* 縐紗搭膊巾. The mulberry is cultivated in all the provinces of China, except the most northerly, and silk is raised wherever the tree grows. The Nanking raw silk is, M. Hedde says, not so called from the city of Nanking, but is an elision of Nántsin-king, i. e. the organzine from Nántsin,

<i>Varieties of each.</i>	<i>Native consumption.</i>	<i>Foreign exportation.</i>
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the part of the city of Hühchau in the NW. of Chehkiáng, where the silkmen live; there are three common sorts, *tsatlee* 七里, *taysaam* 大蠶 "great worm," and *yuenhwá* 園花, "garden flower." That from Sháuhing 紹興, a city between Ningpo and Hángchau, called Shewhing, is divided into three sorts, viz., *tsiuen-mien* 全面, *jung-chwáng* 絨庄, and *tung chwáng* 統庄, which, like the others, are descriptive terms used by the trade.

The three grades of Canton raw silk are mostly named from the town or district in which they are collected. Of the No. 1 sort, there are five varieties, Lungkong 龍江, Lungshán 龍山, Komchuk 甘竹, Wongleen 黃蓮, and Laklau 筍樓. Of No. 2 sort, the best varieties are Kaukong 九江, Hangtán, 杏壇, Shátai 沙頭 and Kot-ngon 葛岸. Of No. 3 and the poorest sort, there are Siú-lám 小欖 and Kwaichau 桂洲; most of these are names of towns lying west and south of Canton city. For notices of many other sorts, and a detailed description of the growth and manufacture of silk in China, the reader is referred to Isidore Hedde's "*Exposition des Produits de l'Industrie Séricène en Chine.*"

In 1854-55, the price of the best sorts of raw silk was from \$280 a 360; for the greater part of that period, No. 1 quality was at \$330. The exportation to England was 51,500 bales, or about 41,000 peculs. The quantity produced to supply the native consumption is so enormous, that notwithstanding the vast increase of the export during the past ten years, the average of prices is lower than when the export was but one fourth of its present amount. The silk-grower looks to the home market for fixing the value of his produce, and prices range according as that demand is active or dull; little or no effect being produced by the foreign exportation, except among speculative holders at the ports.

The export to England is almost exclusively in Nanking kinds, these being of a much finer thread, and possessing a purity of color, a softness, and a lustre not to be found in the silk of the southern provinces. The silk is generally shipped in the bale as originally packed in the country. To the United States the annual export now amounts to about 1800 peculs; this branch has only lately assumed any importance, and consists principally of Canton kinds, Komchuk and Kaukong. The silk is re-reeled and repacked in boxes for shipment. The *fibre* is much coarser than the Nanking, and a darker color, but is even and strong. It is chiefly spun into sewing silk, fringes, &c.; while that sent to England is manufactured into piece-goods. Its cost averages about \$2.50 per *lb.* on board. The silk sent to India is mostly of very coarse descriptions, the lowest qualities of Canton kinds, (called in this market *Punjam* silk, from its resemblance to the Indian raw silk of that name,) and bears

Manufactured silks sent to the United States. Their comparative quality.

more resemblance to tow than to the usual kinds of raw silk. Over 2000 chests are yearly shipped to Bombay, and about 300 chests of No. 3 sort to Singapore, where it is woven into scarfs and entire pieces for garments.

The Nanking silk exported to England is chiefly shipped from Shanghai. Of *thrown silk* hardly any is exported. The largest export of *manufactured silks* is to the United States, with the exception of embroidered shawls to South America, and damasks to India; that to other countries is too small to require any notice. The annual value of the shipments to the United States may be estimated at about \$1,800,000. The prices for goods of equal quality have hardly varied for ten years past, but goods of low cost have been largely shipped at the expense of quality. The principal fabrics are pongees, dress goods, and crape shawls. Of the former the increase in the demand has been steady but moderate, while in dress goods, including satins, checked lustrings and sarsonets, and lining silks, the consumption in America has been immense, and but for the impossibility of inducing the Chinese to use improved machinery, would probably before this have taken the place of French silks in that market. These goods, from lack of such machinery, want the evenness and finish of the French, and their cheapness of cost, and superiority of silk, cannot make up for the absence of these excellencies. The want of this perfect finish to the Chinese goods causes high cost fabrics to be avoided, and the export consists of dress silks, whose cheapness and durability compensate for the absence of a brilliant lustre and distinctness of pattern.

A great part of the large shipments of crape shawls and scarfs to U. S. are reexported to Mexico and South America; no statistics can be obtained of the export direct to the latter places, but the value is considerable. These goods require little aid from machinery, depending for their value upon the skill of the embroiderer, and from the low price of labor and excellence of the workmanship, will always be beyond the competition of other nations. The demand for embroidered goods, which decreased from 1835 to 1847, has since steadily increased.

The wretchedness, that seems inseparable from the abodes of the manufacturers of these most costly and luxurious fabrics in other countries, attaches also to the Chinese silk weaver. Like those of Lyons or Spitalfields, the Chinese maker of satin or brocade lives and dies, surrounded by squalid poverty and filth; and the beautiful and delicate creations of his loom are produced in a hovel where he digs a hole in the earth to procure sufficient space for his treddle to move. He is however more fortunate than the operative of Europe, inasmuch as in the vicinity of Canton he has little to fear from the winter's cold, and the pittance he receives supplies him with more food than the average pay of a silk weaver in Europe can procure in those dearer markets.

Silk and Cotton mixtures.

Shoes.

Sandal-wood Ware.

Soy.

The weavers of piece goods generally confine themselves to the making of one or two kinds, and are unable to undertake others. Pongees are made in most of the villages between Canton and Fuh-shan, 12 miles SW. of it, but not in the city itself. Dress goods and satins are mostly manufactured in Canton; and embroidered goods in the neighboring villages.

Apart from these staple articles, there are others made of a more fancy character, as damasks, camlets, levantines, sewing silks, serges, with brocades and gold thread silks (which chiefly go to India), &c., but their value is too small, owing to the limited use, to call for particular notice.

47. SILK and COTTON MIXTURES, called *mien chau* 棉綢, and *sz' mien ts'oh ho* 絲棉雜貨, are no longer exported, as the beautiful combinations now made in western countries, have wholly supplanted them. A common article, half cotton half silk, dyed an indigo blue, is used at Canton for wadded garments, and to some extent for binding books; but it is not as elegant as silk or as durable as cotton.

48. SHOES, &c., 靴鞋 *hiuch hiái*. Chinese shoes or boots are seldom exported, even in junks, except perhaps some embroidered pairs for the use of Chinese ladies and rich persons living in the Archipelago. The native artisans who make foreign shoes employ horse, cow, or buffalo hide, and they import patent leather, calf-skin, and morocco to some extent. The Chinese tan hide with saltpetre and urine, and the leather is consequently porous and weak. Slippers are made of straw in a neat manner, soled with a strip of hog skin. The price of shoes varies from fifty cents to \$1½ per pair, and proportionably for boots. Considerable quantities of women's shoes are made for South America, but there are no particulars as to the sorts or amount; latterly large exportations of Chinese shoes have been made to California and Australia.

49. SANDAL-WOOD WARE, *tán hiáng muh kí* 檀香木器. The best pieces of sandal-wood are carved into fancy articles, as fans, racks, card-cases, concentric balls, glove-boxes, &c., but nothing definite can be ascertained as to the amount. The fragments are all consumed in distilling the oil, or in making incense sticks. Like all the articles which are included under the comprehensive term of *curiosities*, this ware seldom pays duty, or is reported in cargo manifests.

50. SOY, 豉油 *shí yú*, is a condiment made from the Dolichos bean, which grows in China and Japan; the name is derived from the Japanese *siyau*. To make it, the beans are slowly boiled soft, and then an equal quantity of wheat or barley flour is added; after this has thoroughly fermented and become mouldy, the beans are washed, and put into jars with their weight in salt, adding some aromatics, and three times as much boiling water as the beans were at first. The whole compound is now left for a month, or even longer, exposed to the sun, and then pressed and strained. Good

Silver-ware and Gold-ware. Sugar of two sorts. Sugar candy and Pingfa.

soy has an agreeable taste, and if shaken in a tumbler, lines the vessel with a lively yellowish-brown froth; its color in the dish is nearly black. There are many qualities of it, and when well made all improve by age. Japan soy is considered superior to Chinese, but both are of different qualities, and are probably made of various materials, some of which may be base enough. It is mostly sent to England, India, and America.

51. SILVER-WARE and GOLD-WARE 金銀器 *kin yin ki*. Some of the specimens of workmanship in gold and silver found in the jeweler's shops in Canton are very elegant, especially the cake baskets, bracelets, trays, &c., made in filagree, enameled, nacre, and chased open work. A considerable quantity of silver-ware for the table is manufactured at from 18 to 50 per cent. advance on the weight, according to the amount of ornament. Almost any article of gold or silver-ware can be made in Canton from patterns given to the workmen, and though the table ware is heavier than foreign, its cheapness recommends it. At the Exhibition in 1851, the specimens of Chinese jewelry attracted attention from their grotesque carving and fine filagree-work rather than for their good taste. No data are obtainable as to the annual exportation, but it is probably not under \$100,000.

52. SUGAR, 白糖 *peh táng* and 黃糖 *huáng táng*. From the notices that can be obtained from ancient history, it is very probable that China was the first country in which the sugar cane (*Saccharum officinarum*) was cultivated. Among the Chinese, the cultivation of it is followed everywhere south of lat. 30°, and to an extent sufficient to supply their own wants, and to form an article of export. The varieties of cane are several, and five species of the plant are mentioned; the *chuh chay* is the richest in juice. The process of manufacturing it is simple and laborious. The machinery is rude: two wheels to crush the cane turned by cattle, and some caldrons and pots to boil and granulate the juice, whose fires are fed by the cane; these are all the implements carried to the field. The juice is settled with lime, and afterwards clarified with eggs. The provinces of Fuhkien and Kwángtung furnish most of the sugar used in China. The two principal varieties, white and brown, are each subdivided into three qualities; besides which there is the *kieh táng*, a sort of impure molasses, which is consumed on the spot. The manufacture of fancy sugar candy employs many workmen, and some of their landscapes and wedding ornaments are exceedingly pretty; for their eating, the Chinese prefer candies mixed with fruit and seeds, to those which are merely flavored. Large exportations of common sugars have recently been made to Shánghái, India and California; and some to Europe.

53. SUGAR CANDY, 冰糖 *píng táng*, is made by crystalizing the raw sugar; the best comes from Chinchew in Fuhkien. The syrup is evaporated till it becomes red and rather thick, when it is poured into shallow earthen pans, in a hot place; that which crystalizes

Vegetable Tallow, Lard and Suet.

Tin foil.

Tea.

on the surface is called caked sugar, the underlying mass is like muscovado. It is then boiled again in pans holding a few quarts; adding eggs occasionally, and skimming the liquid, when it is poured into pans to cool and crystalize; these pans have strings and slips of bamboo placed across them to collect the crystals. It is for the most part carried to India. *Pingfa sugar* 冰花 *i. e.* 'crystal flowers,' is the name given to the pounded and sifted sugar candy, little of which is exported.

TALLOW, *shū lāh* 樹獵 or *shū káu* 樹膏 *i. e.* tree fat, expressed from the tallow tree (*Stillingia sebifera*), has been shipped to England in small quantities. The tallow envelopes the seed, and is obtained either by pressing the nuts, when it flows from them in an oily form; or by gently boiling them in water, when it floats and hardens on the surface as a cake of oily tallow, which after another careful purification, becomes like lard, having no disagreeable odor, and burning with a clear flame. The tree grows throughout the central and eastern provinces, both wild and cultivated; at Chusan and on the mainland, its preparation is a large branch of industry. The purified tallow is put up in cakes, weighing from 70 to 100 catties, and sells from \$7 to \$12 a pecul. The wick is composed of a woolly fibrous substance, wound on a bamboo; the candles are made by dipping, and are sold white, or colored yellow and red. This substance is used in China for many purposes, and its exportation may increase. Lard and suet are used instead of this in the south for making candles, and the demand for these products is greater than the supply, as candles are much used in religious worship by all classes.

54. TIN FOIL, 錫簿 *seh poh*, is made in the same way as sheet lead. The liquid metal is poured upon a smooth stone covered with oiled paper, and inclined a little, when the workman instantly drops a second stone upon it, and then steps on it to press it as thin as he can. An amalgam of tin and quicksilver in a foil is used to silver glass; the piece of glass, wiped clean, is laid on a sheet of silk paper laid over the foil, and the paper quickly drawn out, leaving the foil sticking on the back of the glass. Tin foil is estimated at half the value of brass leaf; it goes chiefly to India, where it is used by toy makers.

55. TEA, 茶 *cha*, or 茶葉 *cha yeh* (*i. e.* tea leaf); but the term *cha* is also applied to all the species of *Camellia* by the Chinese, as well as the tea. This is the most valuable and important of all the exports from China. Its infusion has been used as a common beverage by the Chinese for a thousand years, and the plant is now cultivated for the sake of its leaf in China, Corea, Japan and Assam, where it is indigenous; and in Simla, Java, and Brazil, where its introduction has been attempted. It will be enough to refer in this place to the works of Ball and Fortune for the details respecting the collecting and curing the tea leaf for domestic use and for ex-

*Localities of the Tea shrub.**Names of Teas.**Congou.*

portation, and the modes by which so many varieties are manufactured from the leaves of a single plant. They have shown, that though there are two, and perhaps more, species of *Thea*, black or green tea can be made from either; and that the state of the leaf, the qualities of the soil, the degree of heat applied, and the foreign ingredients employed in the manipulation, account satisfactorily for all the differences perceived in the cured teas of commerce. The old notion that green tea, from its metallic taste and verdigris hue, was cured by drying it on copper plates, (not reflecting that heated copper could give off no rust to affect the tea,) is now rectified by learning that this hue is an artificial coloring put on by the Chinese to imitate their own partially dried and delicate green teas designed for home consumption.

The shrub is cultivated in all the provinces south of the Yellow River, but the eastern ones furnish the best tea, and all which is exported coastwise. The range of hills in lat. 28° N., in the north-western part of Fuhkien called the Wú- or Bohea hills, have long been celebrated for the fine teas they produce, mostly black. A low spur of the same great range, the Nán-ling, extending off between the provinces of Chehkiang and Ngánhwui, in lat. 35° N. called the Sunglo hills, are equally famous for their green teas, also known in Canton as Fyehow teas, from the local pronunciation of Hwuichau fú in Ngánhwui; and in Shínghíi, as Taiping and Pingshwui, from two districts in the same region. The two great provinces of Hónán and Húpeh (Oonam and Oopak) also furnish a peculiar class of teas; and the districts of Ngānkí and Ningyáng (Ankoí and Ningyong) in the western parts of Fuhkien, have given names to two sorts brought from those regions. The appellations given to teas frequently change, and are mostly taken from localities where peculiar or fine sorts are cultivated or collected. The terms used among the Chinese are usually descriptive, as *pekoe*, i. e. "white hair," *hi-chun* (hyson) i. e. "bright spring," &c.; while foreign names are oftener known only in the trade, and are taken from places, as Hohow, Singchunekye, Kaisow, &c. The following description of the principal sorts of black and green teas now known in the trade has been furnished for this work by an experienced tea-inspector, and can be relied on as accurate:—

The most important description of tea is called Congou by foreigners, a corruption of *kong-hú*, through the Amoy dialect, of the words *kungfú* 工夫 i. e. laborer's [tea], or tea on which labor has been bestowed. Since the dissolution of the E. I. Company, the quality of this tea has on the whole improved, though it is much better in some seasons than others; since the political disturbances in the tea-growing regions the last three years, it has depreciated. There are eight varieties of Congou manufactured to supply the foreign demand, each presenting an almost endless diversity of quality. The finest kinds are produced in the province of Húpeh (or Oopak), and

*Hünán Congou.**Moning and Hohau sorts.**Kaishow teas.*

are divided into three distinct classes; the best is called *Yáng-liú tung* 楊柳峒 *i. e.* Willow Valley; the middling is *Yung-liú sz'* 楊柳司 *i. e.* Willow township; and the inferior is *Hieh-kia shí* 聶家市 *i. e.* Hieh family market. The congou from Húpeh is easily distinguished by the appearance of the leaf, which in the finer kinds is large, bold, and black, with sometimes a purple hue; the infusion is a rich deep red, and the flavor mellow and soft. From its delicate nature, and refusal to stand much firing without losing its fragrance, it is more liable to turn musty than any other kind of Congou. The best chops are usually brought to Canton.

The congou from Hünán (or Oonam) province exhibits many differences from the Oopak. The leaf has a grayish black appearance, and sometimes a reddish tint; it is not a strong tea, and its flavor occasionally resembles tar, of the origin of which there is much diversity of opinion, the Chinese ascribing it to the nature of the wood burned when firing it. There are three classes of Hünán, the best of which is called *Cháng-shau kiái* 長壽街 *i. e.* Longevity street; the second is *Ping-hiáng* 坪鄉 from the village of Ping; and the inferior or refuse is called *Siáng-tán* 湘潭, a depôt on the River Siáng. Large quantities of all these kinds are annually sent to England.

The class of congous called Moning is so named from the district of Wúning 武寧 in the northeast of the province of Kíngsí, and is also called Ningchau 寧洲 by the teamen in Fuhchau and Shanghai. This kind resembles both the foregoing sorts in appearance; it frequently has an earthy smell and taste, arising from the nature of the soil in which the shrub grows. The best quality is distinguished by the term *Sung-hiang* 松香 *i. e.* fir fragrance; the leaf is usually small, even, and black, and the infusion strong and of an agreeable flavor.

Another important description of congou, which forms a large part of the export, is called Ho-hau 河口, from a mart of that name at the embouchure of the Kiú-kiuh, a stream flowing from Singtsun into the Poyang lake, whence the tea can go either to Shanghai down the Yang-tsz' kiáng, or to Canton by Nancháng fú in Kíngsí; it is the same sort which, with a slight variation in its preparation, was called Bohea in the trade of the East India Company. The leaf is a dark red color, very open and coarse, and the infusion a pale red, which increases in darkness as the quality lowers. This sort of tea is also called *Sing-tsun-kiái* 星村街 or Star-village Street, from the entrepôt of black teas on the northern declivity of the Bohea hills, from whence they are carried to Ho-hau.

The best of black teas is called *Kiái-shau* 界首, and the chops are mostly brought to Canton; its quality and mode of curing are

Souchong. *Four sorts of Pekoe.* *Caper Congou.* *Ankoï Souchong.*

such that it will keep for years in a dry climate without deteriorating. It comes in limited quantities from Shû-fang kiái 書坊街, and is distinguished from other sorts by its small red curly leaf with Pekoe tips; the infusion is brisk, strong, and richly aromatic.

A variety called *Hia-mei* 下梅 *i. e.* inferior Hungmuey, is now rarely to be procured of genuine leaf. Most of it is sent to Sing-tsun kiái, where the teamen buy it up and mix it with other teas for the foreign market. Its flavor is light and pleasant, and the leaf is black and curled.

Another sort, called *Tsáu-tun kiái* 曹墩街, is also grown on the Bohea hills; it has the flavor peculiar to the Ankoï teas; the leaf is mixed, and has a greenish hue after infusion.

Of late years there have been some attempts made in Kwangtung province to produce an imitation of the genuine congou, which is called *Tai-shan* 大山 or Taysaan congou. It has a very strong, highly fired, malty taste, and often looks better than the best "Nanking" teas. It is at present of some importance in the Canton market.

SOUCHONG is a corruption of *siáu-chung* 小種 *i. e.* "small sort," and has nearly as many varieties as Congou. The leaves usually exhibit a reddish tint, and the infusion is of the same color and pale. The best comes from Shû-fang kiái, where the Kiái-shau congous are grown; inferior sorts are brought from the same districts as the Hia-mei and Ho-hau congous.

PEKOE is a corruption of *peh-háu* 白毫 *i. e.* "white hair;" and consists of the earliest leaf buds, collected as they are just bursting in spring, while the down is not yet changed; the best has a soft downy appearance. It is the most delicate of all black teas, as the process of firing destroys the flavor; in selecting it, that is to be preferred which has the most downy leaves, or flowers as they are called, the liquor being of secondary importance. There are four varieties of Pekoe exported; the best or true *Wü-i* 武夷 from the original Bohea hills; the *ki-ling* 旗嶺, which has open black leaves mixed with the blossoms; the *siáu-chí* 小池 *i. e.* "small pool" pekoe, from Tsáu-tun kiái, which has green leaves mixed with it, and is destitute of flavor; and lastly, black leaf Pekoe, which is now rarely sent abroad. There is a variety called Hyson Pekoe, composed of the most tender buds, and used by the Chinese for presents; the least dampness turns it musty, and it has rarely been seen out of China.

CAPER, or *Caper congou*, or *chú-lán* 珠蘭, is black tea from the district of Ngánki 安溪 in the western part of Fuhkien, rolled into small round pellets, the leaves being made to adhere by weak rice water. It presents a reddish brown, curly leaf, sometimes mixed with a large quantity of dust; the infusion is pale red and weak; and the tea the coarsest of all black teas.

Ankoi.	Orange Pekoe.	Oolung.	Hungmuey.	Green Teas.
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ANKOI SOUCHONG, so called from the same district of Ngán-kí, Onkye or Ankoi, is another coarse kind of tea; having large, open mixed leaves, of a dark brown color; the infusion is thin and weak, with a burnt flavor. Spurious leaves are frequently mixed with it. When put up in papers containing about half a pound each, it is called Ankoi Powchong. Imitations of both these sorts are manufactured in Canton.

PLAIN ORANGE PEKOE, called *sháng hiáng* 上香 *i. e.* superior fragrance, is produced in the same district, and possesses the same characteristics as the last two. The leaf is small, close, curled, and of a yellowish hue, with whitish tips like Pekoe; it contains much dust, and the lower grades have brown and dark leaves mixed with them. The export is principally to the United States, very little going to England.

The black teas known as the OOLUNG 烏龍 *i. e.* Black Dragon, are grown in the Ningyáng 寧洋 and other adjacent districts lying a little west of north from Amoy on the confines of Kiángsí; the Kokew Oolung 高橋烏龍 *i. e.* High Bridge Oolung, comes from a region northward and nearer the Bohea Hills. They both resemble Ankoi Souchong in appearance, are very fragrant, and the infusion is pale and delicate. There is a finer sort grown in Sha-hien 沙縣, a district in the prefecture of Yenping in Fuhkien, of which only a little is brought to market; it has a very long black curled leaf, with a purple tinge; the infusion is a pale yellow, highly aromatic, and agreeable. As high as \$1.50 per pound is sometimes paid for this tea.

HUNG MUEY or *hung-mei* 紅梅 *i. e.* red plum blossom, is now in disrepute, and made only in small quantities, the samples shown latterly being deficient in strength. There are four kinds of Hungmuey, viz. *siáu-hú* 小湖 *i. e.* little lake, which has some of the green leaves of Oolung mixed with it; the Tsáu-tun-kiái kind, which partakes of the flavor of Ankoi; the Sing-tsun-kiái kind, which is the best of this sort of tea; and lastly, the Hang-tsz' 裏子 which is brought from the Bohea hills, and is used for mixing with common pekoe for sending to Russia, little or none coming to Canton. Hungmuey is known by its large, open, straggling, dark brown leaf, and the weak unpleasant liquor. The best sorts resemble Souchong, and the leaves show downy tips.

Green Teas are collectively called *Luh-chá* 綠茶, and also *Sung-lo chá* 松羅茶 from the range of hills between Chehkiáng and Nganhwui, where they are mostly produced. There are three classes, called Wúyuen 武園, Hiú-ning 休寧 and Tai-ping 太平 from the names of three districts situated in the southeast of Nganhwui province, each of which is divided into Hyson, Young Hyson,

Young Hyson.	Hyson.	Hyson Skin.	Twankay.	Imperial.
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Hyson Skin, Twankay, Imperial and Gunpowder. The commonest description of the Wúyuen or Moyune teas is called *Cháng-hing kung-sz' ching chá* 長行公司正茶 *i. e.* Common E. I. Company's Hyson; the middling is *chung yen sāng chá* 充眼生茶 *i. e.* common fine-eyed tea; and the finest sort is *ching yen sāng hī-chun chá* 正眼生熙春茶 *i. e.* best fine-eyed Hyson tea. Hiúning, or Yewning, teas are divided into Pingshui 平水 and Hwuichau (or Fychow) 徽州, the names of two regions of country. The three varieties of Taiping teas are named *cháng hing chá* 長行茶 or common; *sháng cháng hing chá* 上長行茶 or superior common; and the best kind is called *yen sāng chá* 眼生茶 *i. e.* eyed fresh tea.

YOUNG HYSON, also called *uchain*, was formerly the finest kind of green tea, and very little of it was procurable; its name is derived from *yú-t sien* 雨前 *i. e.* before the rains, because it was picked when the leaves first unfolded; though deteriorated, it still is the most important of green teas, and is extensively imitated in Kwangtung province, and not unfrequently adulterated with spurious leaves. Fine Moyune tea is generally of a bright greenish, grayish color, yielding a pale delicate yellow liquor, with a burnt flavor peculiar to each variety of this class. Yewning tea is darker, and the leaves are speckled with white. Taeping is the most common of green teas; the leaves are also speckled white, and have a disagreeable tarry smell.

HYSON is derived from *hī-chun* 熙春 *i. e.* vigorous spring, and is also called *ching chá* 正茶 or true tea. It has a well matured leaf, curled and twisted, of a bright green color, sometimes glazed; the natural color is a pale yellow inclining to green, and the infusion of the best is of a pale straw color, becoming darker as the quality deteriorates.

HYSON SKIN, or *pí chá* 皮茶 *i. e.* skin tea, is the refuse of green teas; the best samples are free from dust, with a large, uneven, twisted, knobby leaf, and the liquor like that of other green teas of same quality. It used to be sent to America, but now goes chiefly to Australia.

TWANKAY 屯溪 is so designated from the river Twan in the district of Taiping in Nganhwui, has latterly gone out of favor, and not much is manufactured. The leaf is curled, open, and bright, and resembles Hyson in make; some chops of this tea are in reality good Hyson.

IMPERIAL and GUNPOWDER are foreign designations; the first is named *yuen chú* 元珠 *i. e.* best pearl; the latter *chí chú* 芝珠 *i. e.* sesamum pearl, from the round leaves. They are sold together, the former being merely the largest leaves picked out of the whole

Canton Teas. Scented Orange Pekoe. Other names of Tea. Brick Tea.

lot; both present a pale infusion, and the leaves should be rolled round and bright.

Canton Teas is a general name given to imitations of the preceding sorts, both black and green, all the principal varieties being made in large quantities, and some of them extensively adulterated. The best Canton green teas are produced in Hwáng-ho 橫河 and Sán-to-chuh 竹多三; and diminishing in value as they come from the district of Hwa 花縣, from Taishan 大山, Kaúlien 九連, Kih-shwui 急水, and Shin-kí 嶺溪, all of which are places lying north of Canton city. They are usually dyed or glazed green by rolling them in heated pans, after sprinkling them with a mixture of prussian blue and powdered gypsum. The blossoms used to scent tea are the *kwei hwa* 桂花 or *Olea fragrans*, orange, jessamine, Gardenia and Chloranthus.

SCENTED ORANGE PEKOE, called *hwá hiáng*, 花香 flower aroma, and *Scented Caper*, called 花香珠蘭 *hwá hiáng chú-lán*, are both made from tea cultivated in Kwangtung. They all go to England, where their consumption is steadily increasing. The former has a twisted black leaf, with a highly burnt flavor; the latter is the Imperial of black teas, and is often adulterated with other leaves, and disguised with deleterious ingredients.

Besides the names here enumerated, there are a few others which occur in books of old date, but have now become quite obsolete in the trade. *Campoí* or *kien pei* 揀焙 *i. e.* "selected for firing," is a delicate species of congou. *Padre Souchong* was a name given to some fine samples of souchong, which were cultivated and cured by priests in the Bohea hills for presents; other names, as *lien-tsz'-sin* 蓮子心 or lotus seed kernels; *tsioh sheh* 雀舌 or "sparrow's tongues;" *lung twan* 龍團 "dragon's pellet;" and *lung sü* 龍鬚 or "dragon's whiskers," are varieties of souchong and pekoe. *Sonchi*, a corruption of *Sung-chi* 松製 or Sunglo manufacture, is now called *caper souchong*; 君眉 *kiun-mí*, or "prince's eyebrows," and *tsz' hau* 紫毫 "carnation hair," are called *flowery pekoe* in commerce. These are all black teas. The list given above contains nearly all the names commonly given to green tea, which the Chinese do not drink as it is prepared for exportation. The tea sent to Russia is grown chiefly in Sz'chuen and Honán provinces, from whence it is collected by native brokers and carried to Kwei-hwá in the north of Shánsí, previous to its transportation to Kiakhta. The brick tea 磚茶 *chuen cha*, used in northern Burmah and throughout Tibet, Mongolia, and westward even to Khiva, is also prepared in Sz'chuen, and sold at Sining in Kánsuh, 'Táli in Yun-nan, Tátsienlu in Sz'chuen, and other frontier marts. The maritime Chinese never use it.

*Mode of scenting Tea.**A chop of Tea.**Export of Tea.*

The mode of scenting green and black teas varies a little, and the object in view in the operation is to impart the delicate flavor of fine tea to the common sorts. The heated leaves of the cured green tea are poured into a basket two inches deep, and then covered with a layer of fresh flowers; another layer of leaves and more flowers are then placed above them, until the basket is full, when a tatch is covered over the whole, and remains a day. The next day, the whole mass is fired in a lined sieve for one or hours, and the flowers sifted out just before packing the tea in leaden chests; frequently the highly scented tea is mixed with plain, one catty to eighteen or twenty, to impart a delicate scent. Black teas are sometimes sprinkled with chulan (*Chloranthus*) flowers dried by themselves, or even powdered, just before the last firing has been given to the tea, and the whole packed up together for exportation. But the larger blossoms of the jasmine and *kwei hwa* are not mixed thus with the tea, though many may be often seen in lots which have been imperfectly sifted. The cultivation of these flowers for scenting is a branch of agriculture of considerable importance about Canton.

The word chop, (*hau* 號 or *tsz' hau* 字號 a term of common use in the tea trade,) means merely a brand or mark, and is given by the brokers who make up the lots of tea in the country. It is frequently the name of a firm, or merely a fancy appellation applied to each distinct lot of the same quality and origin, to distinguish it from other lots, even of the same sort of tea. A chop can therefore be as few as 2 or 3 chests, or even 1200; a chop of congou is usually 600 chests, but other kinds of tea not being so uniform are reckoned by packages, and not by chops. The "chop name" consists of two characters, as *yuh-lán* (Magnolia), *hing lung* (Rising Affluence), *fang chí* (Fragrant Sesamum), &c., and has slight reference to the origin or quality of the tea.

The exportation of tea is annually increasing, but the quality of the mass of the leaf has deteriorated during the last four or five years, owing to the disturbances in the tea districts, and impediments met in bringing it to port. The total export coastwise for the year ending June 1855 was 123 millions of pounds, and about 110 millions the previous year. In 1845 it was under eighty millions, showing a gradual annual increase to all the consuming countries. It is noticeable that the use of black teas in various places has succeeded that of green, the former being preferred in newly settled countries, as Australia and United States. The descriptions of tea are intermixed in every variety of combination by the tea-brokers, but are not mixed to much extent among the Chinese. Considering the great amount of this leaf sent out of China, and the facilities for mixing those of other plants before sending it abroad, it must be acknowledged that there is a large degree of mercantile honesty among the manufacturers, who have doubtless found that it is their best policy.

Tobacco.

Turmeric, a spice and dye.

Tortoise-shell Ware.

56. TOBACCO, *yen* 烟 or *yen yeh* 煙葉, is grown in all parts of China; there are two species cultivated, the *Nicotiana Chinensis* and *fruticosa*; Chehkiáng and Húpeh, with Sinhwui and Nanhiung in Kwangtung, furnish the most esteemed qualities. The leaf is usually brought to Canton uncut, simply dried in the open air, and tied in bales after assorting it, without any envelop. Its color varies from a pale yellow, to a brown and reddish chocolate; and the odor and taste from an acrid sharp flavor to an agreeably fragrant mild taste, all owing to difference of soil and climate. Chinese tobacco is on the whole weaker than the Manila or American; the uncut leaf and the prepared are both occasionally soaked in a solution of opium to increase their narcotic properties; it is also colored with other preparations. The most common sorts are the *sang*, *shuh*, and *shoui yen*, or raw, cured, and water tobacco; all of which are exported to the Archipelago, principally in native vessels, and also to Europe and South America. The leaf is cut with large planes for smoking; and cigarettes are made by rolling it in bamboo paper. None is chewed, and comparatively very little is taken as snuff, and much of that is imported.

57. TURMERIC, 黄薑 *huáng kiáng*. This is the dried root of the *Curcuma longa*, a herbaceous plant cultivated in all the Indian islands, and on the continent for its coloring and aromatic qualities. The roots are uneven and knotty, difficult to break or cut, and have a light yellow color externally. The color under the bark is a bright yellow, then reddish near the core, and finally becomes much like that of saffron. It is easily powdered for use, but the dye is very transitory, and no means have yet been found for setting it. It has an aromatic smell resembling ginger, and a warm, disagreeable, bitterish taste. The Hindoos use it less as a dye than a spice in making curries. In packing it, care should be taken that the boxes be secure, as the least damp injures it. Turmeric is a good test for the presence of free alkalis, and the quantity used for this purpose is considerable. It is the only dyestuff used in China which is exported.

58. TORTOISE-SHELL WARE, 玳瑁器 *tái mei kí*. This is the carapace of the *Testudo imbricata*, a native of the shores of most of the Indian islands; the best comes from Borneo, the Spice Is. and New Guinea, but it is collected all over the Archipelago and West Pacific. The common name is hawk's bill tortoise. The shell is thicker, clearer, and more variegated than that of any other species, and constitutes the sole value of the animal. It is heart-form, and consists of thirteen inner, and twenty-five marginal divisions. The entire covering of a tortoise is usually tied in a single package, and afterwards assorted by the purchaser. The middle side-pieces are the thickest, largest and most valuable to the Chinese, and are less esteemed in Europe; the large best plates are free from cracks or carbuncles, and almost transparent. The small, broken and crook-

*Trunks made of camphor and leather.**Treasure exported as sycee.*

ed pieces are worthless. The carving bestowed upon the shell by the Chinese is its chief recommendation, aside from its cheapness, for their ware is inferior in polish and finish to the European. The greatest portion of the export is in combs of various fashions; card-cases, snuff boxes, trays, paper-knives, baskets, and buttons, are also made of the same style as the ivory-ware. The total exportation is probably not less than \$6000, but no particulars of its amount or direction are at hand. More or less finds its way to all parts of the world.

59. TRUNKS, 皮箱 *pí xiāng*, or 皮櫥 *pí lung*, sent abroad are almost entirely made of camphor wood; five form a nest, and are estimated to weigh a pecul. The largest measure about 40 ins. by 20 wide, and 18 ins. deep; they are bound with brass nails, and often prettily painted. The exportation is chiefly to India, South America, and Sydney. Those trunks which are covered with leather, are often an inferior article made of pine, Chinese mahogany, or boiled camphor; if they are left open in the air for a while, the odor of the camphor will soon evaporate in those merely rubbed with the oil. The best are well planed, and then simply varnished. Good leather trunks for the overland passage are now made in Canton; and a very neat shallow leather trunk which supply the place of valises. The Chinese export trunks covered with coir mats for the use of their countrymen in the Archipelago. At Amoy and elsewhere at the north, a light wooden trunk is in common use covered with white hog's skin, and lined with silk and paper, but the sun or rain easily injures them.

60. TREASURE, *kin yin tsien*, *kin yin lui*, 金銀錢金銀類 is exported from China almost entirely in the form of sycee, a name given to pure silver by the Chinese because it is like *sí sz* 細絲 or pure silk; it is also called *min yin* 紋銀 or pure silver. The ingots are shaped like a Chinese shoe, and vary in size from 50 taels' weight down to three mace, and are always stamped with the seals of the assayer and banker in evidence of their purity. The foreign coins which are brought to China gradually becoming reduced to small bits by stamping and clipping, are at last assayed and melted up into sycee, which in that state finds its way to other countries, undistinguished from the native production; the export of sycee silver is almost wholly to India in exchange for opium, where it is recoined into rupees. The Chinese authorities doubtless intended that foreign coins only should be exported under this designation, as they have always shown great opposition to the "oozing out of the pure silver." There has been no opposition of late years, however, to the export of either gold or silver, but the amount carried away has diminished, and it is now divided among many ports, so that the total appears less to the authorities. Gold bullion occurs in ingots of small bars and in the leaf, but this metal does not pass current in payment for duties and taxes to this government.

*Tutenague or Gong Metal.**Vermilion.**Insect Wax.*

TUTENAGUE or *China spelter*, 山銅 *shán tung*. The word *tutenaga* is the Portuguese for zink, and has been misapplied to this and other cupreous alloys by foreigners; it is properly the gong metal of the Chinese, an alloy of copper and tin. It is harder than zink, though less so than iron, sonorous, compact, and has some malleability. The fresh fracture is brilliant, but soon tarnishes. It is made by melting 100 catties of the mineral called *hung-tung* or red copper, with 25 catties of tin, and running it into a thin plate, when intended for gongs. The sonorous quality of these instruments is owing chiefly to long continued and expert hammering, and their price depends in a great measure upon the sound. Other instruments are also made of this alloy, as well as wash-basins, dishes, and small bells. Till superseded by spelter from Silesia, tutenague was clandestinely exported in large quantities (more than 50,000 *cwt.* annually) to India, but is now seldom or never shipped; true spelter being on the contrary imported to compete with it in China. There is still some difficulty in getting the metal in quantities for shipment. Its export price used to be about \$14 a pecul, but it rises as high as \$40; large gongs are sold from 40 a 50 cts. a catty, smaller ones at half that price.

61. **VERMILION**, 銀珠 *yin chú*. This is made of the finest cinnabar, of a bright violet red sublimed in acicular crystals and highly friable, by powdering it between two stones turned by hand, mixing a very little water at the time. The sticky mass is then put into pure water, and frequently levigated, decanted, and finally dried on heated tiles or in the sun, when it is sifted for packing. The quality is generally of the best, and depends much upon the purity of the water, which is mostly brought from Shek-moon west of Canton. It is used for making Chinese red ink, for painting on porcelain and wood, and coloring candles and paper. Its consumption is enormous, for everything lucky and pleasant among the Chinese, as visiting-cards, things connected with marriages or worship, presents, &c., should be colored red. Vermilion is very neatly put in black papers, containing 8 mace, 8 cand. weight in each paper, and enveloped with white; 90 of these papers are contained in a box of 50 catties. The price, for sometime past about \$65 a box, is entirely regulated by that of quicksilver, being generally about 25 per cent. in advance.

WAX, 樹蠟 *shú lāh*, "tree wax," or 白蠟 *peh lāh*, is collected from various trees, where it is secreted by an insect (*Cicada limbata*?) as a nidus to protect its eggs. It is collected after frost, and cleaned from bark and other impurities by melting it on a cloth over boiling water, or in a silk bag immersed in the water. It is employed in plasters, but chiefly in making candles. It melts at 81° Fah., and its hardness recommends it to mix with beeswax, sperm, or lard in the manufacture of candles; the exportation, however, is still limited to a few peculs to England.

<i>Unenumerated articles of Import and Export.</i>	<i>Total value of the trade.</i>
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In addition to the articles mentioned in the foregoing lists of Exports and Imports, there are several still unenumerated, which are occasionally shipped on trial to Europe and India, or form items in the cargoes sent in foreign bottoms on Chinese account. Many of these latter are articles of medicine or food, brought from Siam, Annam, and the Indian Archipelago, but none of them to much extent. Mushrooms, bulbs and dried flowers, gums, bark, and other vegetable productions known in the Chinese pharmacopæia, constantly form parts of import cargoes from those countries. Guano from Peru had begun to find favor in the vicinity of Amoy and Canton, when the better prices obtained on both sides the Atlantic nearly stopped its importation. Birds' feathers, plumes, and dried birds are brought from Burmah and the Malayan peninsula to use in making feather work, and the long tail feathers of the argus and tartar pheasant to grace the headdresses of actors.

Those exports which have been omitted in this descriptive list are probably of less value collectively than the imports, but none of them require particular description. Among them may be mentioned spangles, flower-seeds, living plants, fruits, books, drawings and maps, pencils and other Chinese writing implements, realgar, coal, and lastly what might almost be deemed out of place in such an enumeration, notwithstanding the importance of the trade, the export of Chinese emigrants and laborers across the Pacific and to Australia.

An estimate of the total value and quantity of all the exports and imports in the trade-between China and other countries by sea was attempted, but the uncertainty attending the calculation of nearly every article was such that it was seen that the value of the table would not be equal to the trouble connected with it. There are some branches of the trade which are not amenable to any consulate, and the returns from the Five Ports, even if they could be all obtained accurately, would be far from giving the general total, in consequence of the unknown values carried in and out at Hongkong, Macao, Cumsing-moon, and points of illegal traffic, which would vitiate the whole. In 1836, when the entire trade was centred at Canton, the total value of the import trade, goods, opium and treasure, was reckoned at \$38,579,358; and the export in the three articles tea, silks and treasure, at \$35,257,148, leaving less than four millions for sundries. In 1844, the total was underestimated by Mr. Robert Thom at fifty millions, by at least ten millions of dollars. A rough estimate at the present time, say the close of season 1854-55, gives the entire total of the China trade at about 125 millions of dollars.

CHAPTER IV.

FOREIGN COMMERCE WITH CHINA.

Section 1.

GENERAL REGULATIONS,

UNDER WHICH THE BRITISH TRADE IS TO BE CONDUCTED AT THE FIVE PORTS
OF CANTON, AMOY, FUHCHAU, NINGPO AND SHANGHAI.

Note.—These Regulations were agreed upon between Sir Henry Pottinger and Kiyung, and went into effect July 27th, 1843; their stipulations have in a few particulars been modified by some of the provisions of the American and French treaties; and the obligation mentioned in Art. XV. has been rescinded by the British government, in consequence of ill conduct on the part of the Chinese.

I. PILOTS.

WHENEVER a British merchantman shall arrive off any of the five ports, opened to trade, viz., Canton, Fuhchau, Amoy, Ningpo, or Shanghai, pilots shall be allowed to take her immediately into port; and in like manner, when such British ship shall have settled all legal duties and charges, and is about to return home, pilots shall be immediately granted to take her out to sea, without any stoppage or delay. Regarding the remuneration to be given these pilots, that will be equitably settled by the British consul appointed to each particular port, who will determine it with due reference to the distance gone over, the risk run, &c.

II. CUSTOM-HOUSE GUARDS.

THE Chinese superintendent of customs at each port will adopt the means that he may judge most proper to prevent the revenue suffering by fraud or smuggling. Whenever the pilot shall have brought any British merchantman into port, the superintendent of customs will depute one or two trusty custom-house officers whose duty it will be to watch against frauds on the revenue. These will either live in a boat of their own, or stay on board the English ship, as may best suit their convenience. Their food and expenses will be supplied them from day to day from the custom-house, and they may not exact any fees whatever from either the commander or consignee. Should they violate this regulation, they shall be punished proportionately to the amount so exacted.

<i>Ships to be reported.</i>	<i>Debts.</i>	<i>Tonnage Dues.</i>	<i>Duties on Goods.</i>
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III. MASTERS OF SHIPS REPORTING THEMSELVES ON ARRIVAL.

WHENEVER a British vessel shall have cast anchor at any one of the abovementioned ports, the captain will, within four-and-twenty hours after arrival, proceed to the British Consulate, and deposit his ship's papers, bills of lading, manifest, &c., in the hands of the consul; failing to do which he will subject himself to a penalty of two hundred dollars. For presenting a false manifest, the penalty will be five hundred dollars. For breaking bulk and commencing to discharge before due permission shall be obtained, the penalty will be five hundred dollars, and confiscation of the goods so discharged. The consul having taken possession of the ship's papers, will immediately send a written communication to the superintendent of customs, specifying the register-tonnage of the ship, and the particulars of the cargo she has on board; all of which being done in due form, permission will then be given to discharge, and the duties levied as provided for in the tariff.

IV. COMMERCIAL DEALINGS BETWEEN ENGLISH AND CHINESE MERCHANTS.

It having been stipulated that English merchants may trade with whatever native merchants they please, should any Chinese merchant fraudulently abscond, or incur debts which he is unable to discharge, the Chinese authorities, upon complaint being made thereof, will of course do their utmost to bring the offender to justice; it must, however, be distinctly understood, that, if the defaulter really can not be found, or be dead, or bankrupt, and there be not wherewithal to pay, the English merchants may not appeal to the former custom of the hong-merchants paying for one another, and can no longer expect to have their losses made good to them.

V. TONNAGE DUES.

EVERY English merchantman, on entering any one of the abovementioned five ports, shall pay tonnage dues at the rate of five mace per register-ton, in full of all charges. The fees formerly levied on entry and departure, of every description, are henceforth abolished.

VI. IMPORT AND EXPORT DUTIES.

Goods, whether imported into, or exported from, any one of the abovementioned five ports, are henceforward to be taxed according to the tariff as now fixed and agreed upon, and no further sums are to be levied beyond those which are specified in the tariff. All duties incurred by an English merchant vessel, whether on goods imported or exported, in the shape of tonnage dues, must first be paid up in full, which done the superintendent of customs will grant a port-clearance, and this being shown to the British consul, he will thereupon return the ship's papers, and permit the vessel to depart.

Examination of Goods. Tare. Ad valorem Duties. Mode of paying Duties.

VII. EXAMINATION OF GOODS AT THE CUSTOM-HOUSE.

EVERY English merchant, having cargo to load or discharge, must give due intimation thereof, and hand particulars of the same to the consul, who will immediately dispatch a recognized linguist of his own establishment to communicate the particulars to the superintendent of customs, that the goods may be duly examined and neither party subjected to loss. The English merchant must also have a properly qualified person on the spot to attend to his interests, when his goods are being examined for duty; otherwise, should there be complaints, these cannot be attended to. Regarding such goods as are subject by the tariff to an *ad valorem* duty, if the English merchant cannot agree with the Chinese officer in fixing a value, then each party shall call two or three merchants to look at the goods, and the highest price at which any of these merchants would be willing to purchase, shall be assumed as the value of the goods. To fix the tare on any article, such as tea:—if the English merchant cannot agree with the custom-house officer, then each party shall choose so many chests out of every hundred, which being first weighed in gross, shall afterwards be tared, and the average tare upon these chests shall be assumed as the tare upon the whole, and upon this principle shall the tare be fixed upon all other goods in packages. If there should still be any disputed points which cannot be settled, the English merchant may appeal to the consul, who will communicate the particulars to the superintendent of customs, that it may be equitably arranged. But the appeal must be made on the same day, or it will not be regarded. While such points are still open, the superintendent of customs will delay to insert the same in his books, thus affording an opportunity that the merits of the case may be duly tried and sifted.

VIII. MANNER OF PAYING THE DUTIES.

IT is hereinbefore provided that every English vessel that enters any of the five ports, shall pay all duties and tonnage dues before she be permitted to depart. The superintendent of customs will select certain shroffs, or banking establishments, of known stability, to whom he will give licences, authorizing them to receive duties from the English merchants on behalf of government, and the receipt of these shroffs for any money paid them shall be considered as a government voucher. In the paying of these duties different kinds of foreign money may be made use of, but as foreign money is not of equal purity with sycee silver, the English consuls appointed to the different ports will, according to time, place, and circumstances, arrange with the superintendent of customs at each, what coins may be taken in payment, and what percentage may be necessary to make them equal to standard or pure silver.

Weights & Measures. Lighters. Transhipment. Subordinate consular officers.

IX. WEIGHTS AND MEASURES.

SETS of balance yards for the weighing of goods, of money weights, and of measures, prepared in exact conformity to those hitherto in use at the custom-house of Canton, and duly stamped and sealed in proof thereof, will be kept in possession of the superintendent of customs, and also at the British Consulate, at each of the five ports; and these shall be the standards by which all duties shall be charged, and all sums paid to government. In case of any dispute arising between British merchants and Chinese officers of customs regarding the weights or measures of goods, reference shall be made to the standards, and disputes decided accordingly.

X. LIGHTERS OR CARGO-BOATS.

WHENEVER any English merchant shall have to load or discharge cargo, he may hire whatever kind of lighter or cargo-boat he pleases, and the sum to be paid for such boat can be settled between the parties themselves without interference of government. The number of these boats shall not be limited, nor shall a monopoly of them be granted to any parties. If any smuggling take place in them, the offenders will of course be punished according to law. Should any of the boat-people, while engaged in conveying goods for English merchants, fraudulently abscond with the property, the Chinese authorities will do their best to apprehend them; but at the same time, the English merchants must take every due precaution for the safety of their goods.

XI. TRANSHIPMENT OF GOODS.

No English merchant ships may tranship goods without special permission; should any urgent case happen where transhipment is necessary, the circumstances must first be submitted to the consul, who will give certificate to that effect, and the superintendent of customs will then send a special officer to be present at the transhipment. If any one presumes to tranship without such permission being asked for and obtained, the whole of the goods so illicitly transhipped will be confiscated.

XII. SUBORDINATE CONSULAR OFFICERS.

AT any place selected for the anchorage of the English merchant ships, there may be appointed a subordinate consular officer of approved good conduct, to exercise due control over the seamen and others. He must exert himself to prevent quarrels with the English seamen and natives, this being of the utmost importance. Should anything of the kind unfortunately take place, he will in like manner do his best to arrange it amicably. When sailors go on shore to walk, officers shall be required to accompany them, and should disturbances take place, such officer will be held responsible. The Chinese officers may not impede natives from coming alongside the ships, to sell clothes or other necessities to the sailors living on board.

*Settlement of disputes.**British cruisers in the ports.**Security for ships.*

XIII. DISPUTES BETWEEN BRITISH SUBJECTS AND CHINESE.

WHENEVER a British subject has reason to complain of a Chinese, he must proceed to the Consulate; and state his grievance. The consul will thereupon inquire into the merits of the case, and do his utmost to arrange it amicably. In like manner, if a Chinese have reason to complain of a British subject, he shall no less listen to his complaint and endeavor to settle it in a friendly manner. If an English merchant have occasion to address the Chinese authorities, he shall send such address through the consul, who will see that the language is becoming; and if otherwise, will direct it to be changed, or will refuse to convey the address. If unfortunately any disputes take place of such a nature that the consul cannot arrange them amicably, then he shall request the assistance of a Chinese officer that they may together examine into the merits of the case, and decide it equitably. Regarding the punishment of English criminals, the English government will enact the laws necessary to attain that end, and the consul will be empowered to put them in force; and regarding the punishment of Chinese criminals, these will be tried and punished by their own laws, in the way provided for by the correspondence which took place at Nanking after the concluding of the peace.

XIV. BRITISH GOVERNMENT CRUIZERS ANCHORING WITHIN THE PORTS.

AN English government cruiser will anchor within each of the five ports, that the consul may have the means of better restraining sailors and others, and preventing disturbances. But these government cruisers are not to be put on the same footing as merchant vessels, for as they bring no merchandize and do not come to trade, they will of course pay neither dues nor charges. The resident consul will keep the superintendent of custom duly informed of the arrival and departure of such government cruisers, that he may take his measures accordingly.

XV. ON THE SECURITY TO BE GIVEN FOR BRITISH MERCHANT VESSELS.

IT has hitherto been the custom, when an English vessel entered the port of Canton, that a Chinese hong-merchant stood security for her, and all duties and charges were paid through such security-merchant. But these security merchants being now done away with, it is understood that the British consul will henceforth be security for all British merchant ships entering any of the aforesaid five ports.

Preamble.	Duties by the Tariff.	Trade at Five Ports.	Consuls.
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Section 2.

TREATY BETWEEN CHINA AND THE UNITED STATES OF AMERICA.

Note.—The stipulations of the American Treaty, signed July 3d, 1844, are those which regulate the foreign commerce with China in its leading particulars; its articles cover all the general rules of trade established in the foregoing Regulations.

I. PEACE TO BE MAINTAINED.

THERE shall be a perfect, permanent and universal peace, and a sincere and cordial amity between the United States of America on the one part, and the Tá Tsing Empire, on the other part, and between their people respectively, without exception of persons or places.

II. DUTIES TO BE LEVIED BY A TARIFF.

CITIZENS of the United States resorting to China, for the purposes of commerce will pay the duties of import and export prescribed in the Tariff, which is fixed by and made a part of this Treaty. They shall in no case be subject to other or higher duties than are or shall be required of the people of any other nation whatever. Fees and charges of every sort are wholly abolished, and officers of the revenue who may be guilty of exaction shall be punished according to the laws of China. If the Chinese government desire to modify in any respect the said Tariff, such modifications shall be made only in consultation with consuls, or other functionaries thereto duly authorized in behalf of the United States, and with consent thereof. And if additional advantages or privileges of whatever description be conceded hereafter by China to any other nation, the United States and the citizens thereof shall be entitled thereupon to a complete, equal and impartial participation in the same.

III. TRADE CARRIED ON AT FIVE PORTS.

THE citizens of the United States are permitted to frequent the five ports of Kwángchau, Amoy, Fuhchau, Ningpo and Shánghái, and to reside with their families, and trade there, and to proceed at pleasure, with their vessels and merchandise to or from any foreign port, and from either of the said five ports to any other of them. But said vessels shall not unlawfully enter the other ports of China, nor carry on a clandestine and fraudulent trade along the coasts thereof. And any vessel, belonging to a citizen of the United States, which violates this provision, shall with her cargo be subject to confiscation to the Chinese government.

IV. CONSULS TO BE APPOINTED AT EACH.

FOR the superintendence and regulation of the concerns of citizens of the United States doing business at the said five ports, the government of the United States may appoint consuls, or other officers at the same, who shall be duly recognized as such by the officers of the Chinese government, and shall hold official intercourse and correspondence with the latter, either personal or in writing, as occasion may require on terms of equality and reciprocal respect. If disrespectfully treated or aggrieved in any way by the local authorities, the said officers on the one hand shall have the right to make representation of the same to the superior officers of the Chinese government

Imports and Exports. Tonnage Duty. Passage Boats free. Hiring Persons.

who will see that full inquiry and strict justice be had in the premises; and on the other hand, the said consuls will carefully avoid all acts of unnecessary offense to, or collision with the officers and people of China.

V. IMPORTS AND EXPORTS NOT TO BE LIMITED.

At each of the said five ports, citizens of the United States, lawfully engaged in commerce, shall be permitted to import from their own or any other ports into China, and sell there, and purchase therein and export to their own or any other ports, all manner of merchandise, of which the importation or exportation is not prohibited by this Treaty, paying the duties thereon, which are prescribed by the Tariff hereinbefore established, and no other charges whatsoever.

VI. TWO RATES OF TONNAGE DUTY TO BE PAID.

WHENEVER any merchant vessel belonging to the United States shall enter either of the said five ports for trade, her papers shall be lodged with the consul, or person charged with affairs, who will report the same to the commissioner of customs, and tonnage duty shall be paid on said vessel at the rate of five mace per ton, if she be over one hundred and fifty tons burden, and one mace per ton, if she be of the burden of one hundred and fifty tons or under, according to the amount of her tonnage as specified in the register; said payment to be in full of the former charges of measurement and other fees, which are wholly abolished. And if any vessel, which having anchored at one of the said ports, and there paid tonnage duty, shall have occasion to go to any other of the said ports to complete the disposal of her cargo, the consul or person charged with affairs, will report the same to the commissioner of customs, who, on the departure of the said vessel, shall note in the port-clearance that the tonnage duties have been paid, and report the same to the other custom-houses: in which case, on entering another port, the said vessel shall only pay duty there on her cargo, but shall not be subject to the payment of tonnage duty a second time.

VII. PASSAGE BOATS NOT TO PAY TONNAGE DUTY.

No tonnage duty shall be required on boats belonging to citizens of the United States, employed in the conveyance of passengers, baggage, letters, and articles of provision, or others not subject to duty, to or from any of the five ports. All cargo boats, however, conveying merchandise subject to duty, shall pay the regular tonnage duty of one mace per ton, provided they belong to citizens of the United States, but not if hired by them from subjects of China.

VIII. HIRING PILOTS, LABORERS, SERVANTS, BOATS, &c.

CITIZENS of the United States, for their vessels bound in, shall be allowed to engage pilots who will report said vessels at the passes, and take them into port; and when the lawful duties have all been paid, they may engage pilots to leave port. It shall be lawful for them to hire at pleasure servants, compradores, linguists and writers, and passage or cargo-boats, and to employ laborers, seamen, and persons for whatever necessary service, for a reasonable compensation to be agreed on by the parties, or settled by application to the consular officer of their own government without interference on the part of the local officers of the Chinese government.

IX. CUSTOM-HOUSE GUARD-BOATS.

WHENEVER merchant vessels belonging to the United States shall have entered port, the superintendent of customs will, if he see fit, appoint custom-

Guard-boats. Discharging cargo. Examining Goods for duty. Weights, &c.

house officers to guard said vessels, who may live on board the ship or their own boats at their convenience; but provisions for the subsistence of said officers shall be made by the superintendent of customs, and they shall not be entitled to any allowance from the vessel or owner thereof, and they shall be subject to suitable punishment for any exaction practised by them in violation of this regulation.

X. RULES ABOUT DISCHARGING CARGO IN PART OR IN WHOLE.

WHENEVER a merchant vessel belonging to the United States shall cast anchor in either of the said ports, the supercargo, master, or consignee will, within forty-eight hours, deposit the ship's papers in the hands of the consul, or person charged with affairs of the United States, who will cause to be communicated to the superintendent of customs a true report of the name and tonnage of such vessel, the names of her men, and of the cargo on board, which being done, the superintendent will give a permit for the discharge of her cargo. And the master, supercargo, or consignee, if he proceed to discharge the cargo without such permit, shall incur a fine of five hundred dollars, and the goods so discharged without permit shall be subject to forfeiture to the Chinese government. But if the master of any vessel in port desire to discharge a part only of the cargo, it shall be lawful for him to do so, paying duty on such part only, and to proceed with the remainder to any other ports. Or if the master so desire, he may within forty-eight hours after the arrival of the vessel, but not later, decide to depart without breaking bulk; in which case he will not be subject to pay tonnage or other duties or charges, until, on his arrival at another port, he shall proceed to discharge cargo, when he will pay the duties on vessel and cargo according to law. And the tonnage duties shall be held due after the expiration of said forty-eight hours.

XI. EXAMINATION OF GOODS FOR PAYMENT OF DUTIES.

THE superintendent of customs, in order to the collection of the proper duties, will, on application made to him through the consul appoint suitable officers, who shall proceed, in the presence of the captain, supercargo or consignee, to make a just and fair examination of all goods in the act of being discharged for importation, or laden for exportation, on board any merchant vessel of the United States. And if disputes occur in regard to the value of goods subject to ad valorem duty, or in regard to the amount of tare, and the same cannot be satisfactorily arranged by the parties, the question may within twenty-four hours, and not afterwards, be referred to the said consul to adjust with the superintendent of customs.

XII. STANDARD BALANCES AND MEASURES TO BE FURNISHED.

SETS of standard balances and also weights and measures duly prepared, stamped and sealed according to the standard of the custom-house of Canton, shall be delivered by the superintendent of customs to the consuls of each of the five ports, to secure uniformity and prevent confusion in the measure and weight of merchandise,

XIII. DUTIES TO BE SETTLED BEFORE A SHIP CAN LEAVE.

THE tonnage duty on vessels belonging to citizens of the United States shall be paid on their being admitted to entry. Duties of import shall be paid on the discharge of the goods, and duties of export on the lading of the same. When all such duties shall have been paid, and not before, the superintendent of customs shall give a port-clearance, and the consul shall return the ship's papers, so that she may depart on her voyage. The duties shall

Transshipments. Trade free. Debts. Renting, building and traveling.

be paid to the shroffs authorized by the Chinese government to receive the same in its behalf. Duties payable by merchants of the United States shall be received either in sycee silver or in foreign money, at the rate of exchange as ascertained by the regulations now in force. And imported goods, on their resale or transit in any part of the empire, shall be subject to the imposition of no higher duty than they are accustomed to pay at the date of this Treaty.

XIV. TRANSHIPMENT OF GOODS BY PERMISSION.

No goods on board any merchant vessel of the United States in port, are to be transhipped to another vessel, unless there be particular occasion therefor, in which case the occasion shall be certified by the consul to the superintendent of customs, who may appoint officers to examine into facts, and permit the transhipment. And if any goods be transhipped without such application, inquiry, and permit, they shall be subject to be forfeited to the Chinese government.

XV. TRAFFIC OPEN TO ALL CLASSES.

THE former limitation of the trade of foreign nations to certain persons appointed at Canton by the government, and commonly called hong-merchants, having been abolished, citizens of the United States, engaged in the purchase or sale of goods of import or export, are permitted to trade with any and all subjects of China without distinction, they shall not be subject to any new limitations, nor impeded in their business by monopolies or other injurious restrictions.

XVI. GOVERNMENTS NOT RESPONSIBLE FOR DEBTS.

THE Chinese government will not hold itself responsible for any debts which may happen to be due from subjects of China to citizens of the United States, or for frauds committed by them; but citizens of the United States may seek redress in law; and on suitable representation being made to the Chinese local authorities through the consul, they will cause due examination in the premises, and take all proper steps to compel satisfaction. But in case the debtor be dead or without property, or have absconded, the creditor cannot be indemnified according to the old system of the cohong so called. And if citizens of the United States be indebted to subjects of China, the latter may seek redress in the same way through the consul, but without any responsibility for the debt on the part of the United States.

XVII. LIMITS AND ACCOMMODATIONS FOR FOREIGNERS.

CITIZENS of the United States, residing or sojourning at any of the ports open to foreign commerce, shall enjoy all proper accommodation in obtaining houses and places of business, or in hiring sites from the inhabitants on which to construct houses and places of business, and also hospitals, churches and cemeteries. The local authorities of the two governments shall select in concert the sites for the foregoing objects, having due regard to the feelings of the people in the location thereof; and parties interested will fix the rent by mutual agreement, the proprietors on the one hand not demanding any exorbitant price, nor the merchants on the other unreasonably insisting on particular spots, but each conducting with justice and moderation. And any desecration of said cemeteries by subjects of China shall be severely punished according to law. At the places of anchorage of the United States, the citizens of the United States, merchants, seamen or others sojourning there, may pass and repass in the immediate neighborhood, but they shall not at their pleasure make excursions into the country among the villages at large,

Study of Chinese. Protection. No second duty. Americans free of Chinese law.

nor shall they repair to public marts for the purpose of disposing of goods unlawfully, and in fraud of the revenue. And in order to the preservation of the public peace, the local officers of government, at each of the five ports shall in concert with the consuls, define the limits beyond which it shall not be lawful for citizens of the United States to go.

XVIII. LEARNING THE CHINESE LANGUAGE.

It shall be lawful for the officers or citizens of the United States to employ scholars and people of any part of China, without distinction of persons, to teach any of the languages of the empire, and to assist in literary labors; and the persons so employed shall not for that cause be subject to any injury on the part either of the government or of individuals; and it shall in like manner be lawful for citizens of the United States to purchase all manner of books in China.

XIX. PROTECTION GRANTED TO PEACEABLE RESIDENTS.

ALL citizens of the United States in China peaceably attending to their affairs, being placed on a common footing of amity and goodwill with subjects of China, shall receive and enjoy for themselves, and everything appertaining to them, the special protection of the local authorities of government, who shall defend them from all insult or injury of any sort on the part of the Chinese. If their dwellings or property be threatened or attacked by mobs, incendiaries, or other violent and lawless persons, the local officers, on requisition of the consul, will immediately dispatch a military force to disperse the rioters, and will apprehend the guilty individuals and punish them to the utmost rigor of the law.

XX. GOODS NOT TO BE SUBJECTED TO A SECOND DUTY.

CITIZENS of the United States who may have imported merchandise into any of the free ports of China, and paid the duty thereon, if they desire to re-export the same in part or in whole to any other of the said ports, shall be entitled to make application through their consul, to the superintendent of customs, who, in order to prevent fraud on the revenue, shall cause examination to be made by suitable officers to see that the duties paid on such goods as are entered on the custom-house books, correspond with the representation made, and that the goods remain with their original marks unchanged; and shall then make a memorandum in the port-clearance of the goods and the amount of duties paid on the same and deliver the same to the merchant, and shall also certify the facts to the officers of customs of the other ports; all which being done, on the arrival in port of the vessel in which the goods are laden, and everything being found on examination there to correspond, she shall be permitted to break bulk and land the said goods, without being subject to the payment of any additional duty thereon. But if on such examination, the superintendent of customs shall detect any fraud on the revenue in the case, then the goods shall be subject to forfeiture and confiscation to the Chinese government.

XXI. AMERICANS AMENABLE TO THEIR OWN CONSULS.

SUBJECTS of China, who may be guilty of any criminal act towards citizens of the United States shall be arrested and punished by the Chinese authorities according to the laws of China. And citizens of the United States, who may commit any crime in China, shall be subject to be tried and punished only by the consul or other public functionary of the United States thereto authorized, according to the laws of the United States. And in order to the prevention of all controversy and disaffection, justice shall be equitably and impartially administered on both sides.

<i>Neutral flags.</i>	<i>Trade Reports.</i>	<i>Disputes.</i>	<i>Consuls control ships.</i>
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XXII. AMERICAN SHIPS IN TIME OF WAR.

RELATIONS of peace and amity between the United States and China being established by this treaty, and the vessels of the United States being admitted to trade freely to and from the five ports of China open to foreign commerce, it is further agreed, that in case at any time hereafter China should be at war with any foreign nation whatever, and should for that cause exclude such nation from entering her ports, still the vessels of the United States shall not the less continue to pursue their commerce in freedom and security, and to transport goods to and from the ports of the belligerent ports, full respect being paid to the neutrality of the flag of the United States : provided that the said flag shall not protect vessels engaged in the transportation of officers or soldiers in the enemy's service, nor shall said flag be fraudulently used to enable the enemy's ships with their cargoes to enter the ports of China : but all such vessels so offending shall be subject to forfeiture and confiscation to the Chinese government.

XXIII. TRADE REPORTS TO BE ANNUALLY MADE.

THE consuls of the United States, at each of the five ports open to foreign trade, shall make annually to the respective governors-general thereof, a detailed report of the number of vessels belonging to the United States which have entered and left said ports during the year, and of the amount and value of goods imported or exported in said vessels, for transmission to and inspection of the Board of Revenue.

XXIV. SETTLEMENT OF DISPUTES.

IF citizens of the United States have special occasion to address any communication to the Chinese local officers of government, they shall submit the same to their consul or other officer to determine if the language be proper and respectful, and the matter just and right; in which event, he shall transmit the same to the appropriate authorities for their consideration and action in the premises. In like manner, if subjects of China have special occasion to address the consul of the United States, they shall submit the communication to local authorities of their own government, to determine if the language be respectful and proper, and the matter just and right: in which case the said authorities will transmit the same to the consul or other officer for his consideration and action in the premises. And if controversies arise between citizens of the United States and subjects of China, which cannot be amicably settled otherwise, the same shall be examined and decided conformably to justice and equity by the public officers of the two nations acting in conjunction.

XXV. AMERICANS TO SETTLE THEIR OWN CONTROVERSIES.

ALL questions in regard to rights, whether of property or person, arising between citizens of the United States in China, shall be subject to the jurisdiction, and regulated by the authorities of their own government. And all controversies occurring in China between citizens of the United States and the subjects of any other government, shall be regulated by the treaties existing between the United States and such governments respectively, without interference on the part of China.

XXVI. CONSULS TO CONTROL SHIPS. PIRACIES.

MERCHANT vessels of the United States being in the waters of the five ports of China open to foreign commerce, will be under the jurisdiction of the officers of their own government, who with the masters and owners thereof will manage the same without control on the part of China. For injuries done to

<i>Piracies.</i>	<i>Shipwrecked crews.</i>	<i>Embargo.</i>	<i>Rendition of criminals.</i>
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the citizens or the commerce of the United States by any foreign power, the Chinese government will not hold itself bound to make reparation. But if the merchant vessels of the United States, while within the waters over which the Chinese government exercises jurisdiction, be plundered by robbers or pirates, then the Chinese local authorities civil and military, on receiving information thereof will arrest the said robbers or pirates, and punish them according to law, and will cause all the property which can be recovered, to be placed in the hands of the nearest consul, or other officer of the United States, to be by him restored to the true owner. But if by reason of the extent of territory and numerous population of China, it shall in any case happen that the robbers cannot be apprehended, and the property only in part recovered, then the law will take its course in regard to the local authorities, but the Chinese government will not make indemnity for the goods lost.

XXVII. WRECKED SHIPS AND CREWS TO BE PROTECTED.

IF any vessel of the United States shall be wrecked or stranded on the coast of China, and be subjected to plunder or other damage, the proper officers of government, on receiving information of the fact, will immediately adopt measures for their relief and security, and the persons on board shall receive friendly treatment, and be enabled to repair at once to the most convenient of the five ports, and enjoy all facilities for obtaining supplies of provisions and water. And if a vessel shall be forced in whatever way to take refuge in any port other than one of the five ports, then in like manner the persons on board shall receive friendly treatment, and the means of safety and security.

XXVIII. NO EMBARGO TO BE PUT ON AMERICAN SHIPS.

CITIZENS of the United States, their vessels and property, shall not be subject to any embargo; nor shall they be seized or forcibly detained for any pretence of the public service, but they shall be suffered to prosecute their commerce in quiet, and without molestation or embarrassment.

XXIX. MUTINEERS AND CRIMINALS FLEEING FROM JUSTICE.

THE local authorities of the Chinese government will cause to be apprehended all mutineers or deserters from on board the vessels of the United States in China, and will deliver them up to the consuls or other officers for punishment. And if criminals, subjects of China, take refuge in the houses or on board the vessels of citizens of the United States, they shall not be harbored or concealed, but shall be delivered up to justice, on due requisition by the Chinese local officers, addressed to those of the United States. The merchants, seamen, and other citizens of the United States shall be under the superintendence of the appropriate officers of their government. If individuals of either nation commit acts of violence and disorder, use arms to the injury of others, or create disturbances, endangering life, the officers of the two governments will exert themselves to enforce order, and to maintain the public peace by doing impartial justice in the premises.

XXX. MODE OF OFFICIAL COMMUNICATION PRESCRIBED.

THE superior authorities of the United States and of China, in corresponding together shall do so on terms of equality, and in the form of mutual communication (*chau hwei*). The consuls and the local officers, civil and military, in corresponding together, shall likewise employ the style and form of mutual communication (*chau hwei*); when inferior officers of the one government address superior officers of the other, they shall do so in the style and form of memorial (*shin chin*). Private individuals, in addressing superior officers,

Style of Address. Letters to court. Ships of war. Smuggling. Revision of Treaty.

shall employ the style of petition (*pin ching*). In no case shall any terms or style be suffered which shall be offensive or disrespectful to either party. And it is agreed that no presents, under any pretext or form whatever, shall ever be demanded of the United States by China, or of China by the United States.

XXXI. COMMUNICATIONS FOR THE EMPEROR.

COMMUNICATIONS from the government of the United States to the court of China shall be transmitted through the medium of the imperial commissioner charged with the superintendence of the concerns of foreign nations with China, or through the governor-general of the Liang Kwáng, that of Min and Cheh, or that of the Liang Kiáng.

XXXII. SHIPS OF WAR MAY VISIT ANY PORT.

WHENEVER ships of war of the United States, in cruising for the protection of the commerce of their country, shall arrive at any of the ports of China, the commanders of said ships, and the superior local authorities of government, shall hold intercourse together in terms of equality and courtesy in token of the friendly relations of their respective nations. And the said ships of war shall enjoy all suitable facilities on the part of the Chinese government in the purchase of provisions, procuring water, and making repairs if occasion requires.

XXXIII. CLANDESTINE TRAFFIC AND OPIUM DISALLOWED.

CITIZENS of the United States who shall attempt to trade clandestinely with such of the ports of China as are not open to foreign commerce, or who shall trade in opium or any other contraband article of merchandise, shall be subject to be dealt with by the Chinese government, without being entitled to any countenance or protection from that of the United States; and the United States will take measures to prevent their flag from being abused by the subjects of other nations as a cover for the violation of the laws of the empire.

XXXIV. REVISION OF TREATY.

WHEN the present convention shall have been definitively concluded, it shall be obligatory on both powers, and its provisions shall not be altered without grave cause; but, inasmuch as the circumstances of the several ports of China, open to foreign commerce are different, experience may show that inconsiderable modifications are requisite in those parts which relate to commerce and navigation; in which case the two governments will, at the expiration of twelve years from the date of the said convention, treat amicably concerning the same, by the means of suitable persons appointed to conduct such negotiation. And when ratified, this treaty shall be faithfully observed in all its parts by the United States and China, and by every citizen and subject of each. And no individual state of the United States can appoint or send a minister to China to call in question the provisions of the same.

IN faith whereof, we, the respective plenipotentiaries of the United States of America, and of the Tá Tsing Empire as aforesaid, have signed and sealed these presents. Done at Wángghíá, this third day of July, in the year of our Lord Jesus Christ, one thousand eight hundred and forty-four, and of Tau-kwáng, the twenty-fourth year, fifth month, and eighteenth day.

<i>Coast off Canton.</i>	<i>Pilot boats.</i>	<i>Price for piloting to Hongkong.</i>
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Section 3.

SHIPS ARRIVING AT WHAMPOA.

A ship, on making the islands off the mouth of the Canton river, will generally see in fine weather, a number of fishing-boats at some distance from the land. These are liable to be mistaken by strangers for pilot-boats, which in their competition for employment often come off five, ten or more miles. The fishing-boats may be distinguished, however, by observing that they are always in pairs, of large dimensions with broad sterns, and high out of the water; whereas the pilot's or comprador's boats are long and low, with short masts raking well aft, and will usually hoist a flag or a private signal to make themselves conspicuous to a foreign ship as soon as possible. On their approaching the ship in the SW. monsoon, sail should be reduced; and if they happen to miss, it is advisable, even when going six or seven knots, to reduce sail in preference to rounding the ship to, for the eddies and undertow (called *chowchow water* by the pilots) are often so very strong during the freshes, that when a ship heaves to, much time is lost in getting her head to the course again. On receiving one of these pilots on board, no anxiety should be shown to secure him, for they are cunning enough to demand from strangers much more than is usually given. The price which may be fairly paid him must be left to the commander's judgment, and the exigencies of the case. In ordinary weather, ten or twelve dollars may be considered a sufficient remuneration for his services for taking the ship into Macao Roads or to Hongkong, but at other times, thirty dollars may not be exorbitant. As soon as a vessel enters the latter port, she will be boarded by the harbor-master's boat, and directed where to anchor; but in going into Macao Roads there are no regulations of any kind.

After a ship has anchored in Macao Roads or in Hongkong, the captain makes such arrangements for proceeding up the river with his vessel as circumstances require. It is not often that a ship now proceeds from the coast directly to Whampoa without stopping, and therefore nothing need be said to the outside pilot about carrying her into the river, with which indeed he has no concern. His boat is however usually connected with the establishment of pilots on shore, and he will perhaps inquire when a river pilot is probably wanted. Formerly, it was necessary to apply a day beforehand for a pilot, who had to inform the sub-prefect at Casa Branca, that a foreign ship was about to proceed up the river, give in the particulars of her nation, cargo, armament, &c., and obtain a permit. At present, he goes on board when he is wanted. The rates of pilotage were formerly fixed at \$60 for every vessel, whatever might be her size, to be paid when application was made. The establish-

*Pilot establishments.**Rates of pilotage.**Bogue Report.*

ment then consisted of 22 head pilots, each of whom paid upwards of \$600 for the station, and was made answerable for the character of the ships he conducted up the river, that no men-of-war were smuggled in, nor any obnoxious persons or women on board. There are now 20 head pilots, who are distributed at Canton, Macao, and Hongkong, at the pilot-offices in those places, and who have the whole business, equally dividing their receipts among the three offices.

The authorities at Canton issued a public notice in Aug. 1843, allowing any fisherman to act as a pilot to a foreign ship, in the same manner as the old regularly licensed pilots, provided he was furnished with a pass. The British superintendent of trade at the same time also issued a Notification, requesting masters of vessels to furnish such pilots as they found to be capable with a certificate; three of these certificates were to entitle the pilot to a license, which is now furnished by the harbor-masters at Hongkong and Macao.

The rates of pilotage are fixed at 5 cents per register ton, and the pilot is paid after the ship is anchored at Whampoa. Before she proceeds up the river, it is necessary to obtain a Bogue Report, from the consul or consular agent, stating the name, nation, &c., which is handed in at the Bogue, and thence forwarded to the hoppo's office at Canton. The entrance of the Pearl river at the Bogue is considered to form the limit of the port of Canton; it is about 45 miles from the city.—The following is the form of the report in English and Chinese:—

I (*Richard Roe*), master of the (*British*) ship (*John Doe*), hereby declare that I have arrived from Hongkong with a general cargo, and am now proceeding with the same to Whampoa.

Given in at the Custom-house station, island of North Wangtung, this 26th day of March, 1856, at 2 o'clock.

過 虎 門 關 口 報 單	十 日 未 刻 報 單	咸 豐 六 年 二 月 二	報 知	入 赴 黃 埔 理 合	港 來 現 過 虎 門	各 樣 等 貨 由 香	主 名 裝 載	船 字 號 船	本 船 係 國
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N. B. The master of every ship is requested to be particular in noting down the time correctly when this report is handed in; he is also requested to procure a duplicate of the Chinese characters employed to write his own name, and the name of his ship, in order that he may present the same at the Consulate to prevent confusion in the characters used to represent the English names.

*Ship's Compradors.**Chowchow water.**River Pilots.*

Comprador's boats often board ships outside as well as pilots, sometimes the two establishments unite in the same boat; vessels manned by Europeans will find them useful. There is little or no difference in their charges, and it is as well to employ the first who reaches the ship, for it will offer a greater inducement for them to keep a sharp lookout, and come on board at a greater distance from land. The business of purveying for ships, is however not farmed out as it was before the war of 1840, and captains often defer arranging with compradors until they arrive at Whampoa. When engaged, they accompany the ships up, bring fresh provisions, hire workmen, purchase whatever is wanted, and act as clerks during her stay in port. American ships have been, for several years past, supplied by a single native firm, of which there are now branch establishments at Hongkong and Macao. English ships have usually been furnished by separate compradors, but there is little difference in their charges. Similar persons are also easily obtained in Macao Roads.

When the river pilot comes on board, the vessel proceeds up to the Bogue. In her progress through Kap-shui-moon and up Lintin Bay, and in fact in all the channels and passages among the islands, the ship is subject to *chowchow* water; it happening, that while running up with a fair wind, she will be whirled round and round, becoming quite ungovernable, and oftener that she will fly off against the influence of the helm, and keep her head stationary to one point for a great length of time; this may cause a stranger to suppose the ship ashore, and induce alarm, but it is only caused by the strong eddies. If she arrives near the Bogue at night, she must anchor off Chuenpe or wherever convenient; if in the daytime, with a moderate breeze, she may heave to, when a fisherman or another pilot will come alongside, who has been on the lookout, to assist the pilot, while he goes on shore to report the vessel at the Custom-house station on North Wangtung. These river pilots are connected with the establishment at Hongkong, and receive from them \$5 for piloting a ship to Whampoa, and \$6 for conducting her out, as in the latter case, they stay by the ship till she reaches Macao. The river pilot takes the conduct of the ship in the river, and knows the channel much better than the pilot obtained outside. It is as well to know, that these two pilots, to make one think them clever, or show their abilities, are continually roaring out *port! starboard!* till the steersman gets the helm hard up or down, when they cry out *steady!* and before the helm can be righted or the ship steadied, she is across the tide, which puts her much out of her course, and time is thus lost. It is better to make them keep quiet, and not pay much attention to them, letting them point out which way you are to go, but giving orders to the man at the wheel yourself; for the channel being narrow, there is not much room to spare with a fresh breeze and head wind. There is good deal of difference however, among the pilots, and some of them are quite competent to carry a ship up the

<i>Bar Boats.</i>	<i>Present to the Pilot.</i>	<i>Consular Regulations for Ships.</i>
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river; others know much less of the management of a ship, while they are well acquainted with the channel; at times, whether skillful or ignorant, they are unreasonably blamed by the officers of the ship, and not understanding a good deal of what is said to them, get sulky, and care little where or how she goes.

As the ship approaches Second Bar, the pilot talks about Bar boats, which are fishing-boats hired for the occasion, and anchored on the knolls, to point out the proper channel, the ship passing between them. The price is a dollar for each boat, and six is a sufficient number for any ship, and six or eight dollars for both the Second and First Bars is a fair payment, although the pilot will perhaps object to it as not enough; many commanders refuse to pay anything for them, and throw all the responsibility on the pilot of getting the ship through. The commander will always find it for his advantage to treat the pilot well, and since the prices of pilotage have been reduced, to allow him a generous sum for bar-boats and cumshaw; for if the vessel is only 150 or 200 tons, the sum of \$7½ or \$10 does not remunerate him, and a ship of 300 tons hardly pays the outlay of the establishment. On the arrival of the ship at Whampoa or Blenheim Reach, the pilot has done his duty. It is then common to to make him a present of two or three dollars, but though not necessary, it is as well to do it, as they expect it, and their own regular pay at present is little enough. Native boats of all sorts, including even those officially placed by the ship, should be watched, and at night all kept clear of the ship, for many of the boat-people are expert thieves. There is a class of covered row boats, peculiar to the anchorage, called Whampoa boats, whose people are hired to wait on the ship, go of errands, &c.; they are usually connected with the comprador, and are generally trustworthy. They have been furnished with tickets lately by the English Vice Consul, which imposes an obligation on them to be measurably honest, lest they lose it and their custom with it.

The following Regulations were issued in 1854 by the British Vice Consul at Whampoa, for the observance of persons resorting to the anchorage; many of them are based on the Consular Regulations issued by the British Superintendent of Trade.

Regulations for British ships at Whampoa.

I. The Vice-consular Office is open from 10 A. M. to 4 P. M. daily, with the exception of Sunday, and those holidays upon which public offices in England are closed.

II. Masters are required, within forty-eight hours after arrival, to deposit with Her Majesty's Consul at Canton, their vessel's certificate of registry or sailing letter, Bocca Tigris pass, and manifest of cargo, after which due permission will be obtained to break bulk.

III. Masters are required, within forty-eight hours after arrival, to deposit, or cause to be deposited, with the Vice-Consul at this anchorage, the agreement with the crew, and the register tickets of all the crew who are subjects of Her Majesty: the whole to be kept by him during the ship's stay, and, excepting the register tickets of deserters, to be returned to the master a reasonable time before departure.

Authority over Seamen. British Residents. Sailors not to go to Canton.

IV. The laws of England are in full force for offences committed against the subjects of China and all other persons, regard being had to difference of local circumstances, and to the provisions of ordinances for Her Majesty's subjects within the dominions of the Emperor of China, or within any vessel at a distance of not more than one hundred miles from the coast of China. No seaman can be shipped, discharged, or left behind, without the previous sanction in writing of the consular functionaries; and they are instructed by the Lords Commissioners of the Admiralty not to grant such discharge except in cases of great urgency. In those cases where offenders may be given in charge legally without the previous issue of a warrant, application is required to be made to the constable at the office of the Vice-Consul, who will lend assistance in case of need. Desertions must be reported in writing within twenty-four hours, and the log-book recording the same produced at the Vice-Consulate. Masters are authorized to put intoxicated seamen under restraint on board, reporting the circumstances to the Vice-Consul within forty-eight hours.

V. All masters or other persons in charge of vessels about to leave this anchorage shall give notice thereof in writing to the Vice-Consul, and hoist a blue-peter at least twenty-four hours before the time of intended departure. But the Vice-Consul is authorized to dispense with this regulation on application to him.

VI. Every British subject arriving at this port, not borne on the muster roll of any British ship, and intending to reside here, is required within seven days to enrol himself in a register kept at the Consular offices for the respective districts: And if any British subject conveyed to this port in a British vessel, shall, prior to the departure of such vessel from the dominions of the Emperor of China, be found requiring public relief, such vessel will be held responsible for the maintenance and removal of such distressed British subject.

VII. Any individual appealing from the decision of the Vice-Consul, is required to forward his appeal unsealed and under cover to the Vice-Consul, for transmission to the Consul.

VIII. All fines are payable in ready money. Dollars locally termed *chopped* are received by weight at the rate of 7.17 taels to 10 dollars, and the dollar is received at the exchange of 4s. 2d.

IX. Births must be registered within forty-two days of their occurrence, and deaths previous to interment.

X. Seamen and other persons dying on board, are prohibited from being thrown overboard. Stone and other ballast are not to be flung into the river.

XI. Cleanliness in this climate being indispensable for the preservation of the health of crews, masters are held responsible for payment of their washing. The usual charge is, one dollar for each seaman for the first month or part of a month, and fifty cents each subsequent month or part of a month, of a ship's stay.

XII. Seamen are strictly prohibited from going up to Canton, or from going on shore, or from leaving their ships unaccompanied by a responsible officer. Bum-boats are to be permitted to come alongside the ships in reasonable numbers, at meal times, at the gangways only, to sell clothes and other necessities. Dealers have been cautioned against giving credit, inasmuch as no debt exceeding in amount five shillings, incurred by any seaman, can be recovered until the period of his service shall have been concluded.

The Vice-Consul takes this opportunity to make the following remarks:—

1. On Sunday there is usually an opportunity of attending Divine Service, at 11 o'clock A.M.

2. To avoid exposing European seamen, it is advisable to engage a sampan, or Chinese boat, for pulling up to Canton and about the anchorage. A certain number of boats have been licensed by the Vice-Consul; the number of their license may be ascertained for greater security.

3. To prevent pilfering, a particular watch ought to be kept on Chinese in and about a ship when discharging and loading small loose packages.

Seamen not to land. Bum-boats. Claims on Seamen. Cases of Death.

4. Bathing in the middle of the stream, unless at slack water, is highly dangerous.

5. It is recommended that all masters of vessels exercise mutual vigilance in order to prevent the introduction of intoxicating liquors among their crews.

6. All persons at this anchorage having business with the Vice-Consul are requested to transact it by personal application.

7. Pilots may be obtained at First Bar. They hold licenses either from the Consular authorities, or the harbor-master at Hongkong.

The American authorities have likewise issued some regulations for the better government of the crews of ships frequenting the five open ports, though some of their provisions are applicable only to the anchorage at Whampoa. A marshal of the United States resides there, who has authority under the consul at Canton.

Rules and Regulations for American ships

AT THE FREE PORTS OF CHINA.

1. Whereas jurisdiction over citizens of the United States within the empire of China being by treaty reserved to the United States, by Act of Congress, approved 11th August, 1848, the statute laws and common law of the United States have been extended over said citizens in China, so far as they shall be found applicable in all civil and criminal cases (*See Sec. IVth of Act*); to avoid, as far as possible, the necessity of executing said laws in such cases, it is hereby specially enjoined upon masters and officers of vessels of the United States to use due vigilance to preserve the peace, and prevent difficulties between all seamen and subjects of China, while anchored at either of the five free ports.

2. Seamen are not allowed to land in the vicinity of the anchorage of the vessel to which they belong, or to visit the neighboring city, without permission of the captain or commanding officer, and then under charge of an officer of the vessel, and in no instance to be absent from the vessel over night: *Provided*, however, that the master may make exception in favor of those seamen in whose good character he can confide, and for whose correct conduct he is responsible. The master, or officer in command, will judiciously decide the number of sailors to be absent from the vessel at any one time.

3. Seamen absent from the ship, whether in the vicinity of the anchorage, or at the neighboring city, shall be on board within the time specified by the master or commanding officer;—should any fail of so doing, or be guilty of misconduct, while thus absent, they shall be liable to punishment by fine or otherwise, at the discretion of the Consul, or Consular Agent.

4. Chinese boatmen having voluntarily consented to be registered at the Consul's, or Consular Agent's office, it is recommended to masters of vessels, in employing Chinese boats while in port, to give employment to such only as submit to such registration.

5. Chinese boats with fruit and small articles of trade, *spirituous liquors excepted*, are permitted to approach ships, but only at such times during the day, as the master or commanding officer may deem proper.

6. Masters of vessels are required, on the one hand, to see that all just claims of subjects of China against seamen belonging to their ships are duly liquidated; and on the other to prevent, as far as possible, the Chinese from defrauding seamen.

7. Serious collisions occurring between citizens of the United States (whether seamen, or others belonging to an American vessel) and subjects of China, in which robbery or violence is committed by either party, or in which the death of a Chinese or foreigner ensues, the master or commanding officer of the vessel to which the latter belongs, shall, without delay, report the same to the United States' Commissioner to China, or to the Consul or Consular Agent of the port in which the crime is committed, in order to immediate judicial investigation and action.

<i>Bethels.</i>	<i>Cemeteries.</i>	<i>Spirits sold.</i>	<i>Poisonous nature of Samshoo.</i>
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There are two floating Bethels for religious worship now at Whampoa, to which all seamen have access. Part of the Protestant Bethel is divided off for the admission of such sick seamen as cannot be well attended to on board their own ships, where they are lodged and fed at a reasonable rate. Shops for the sale of sundries have been opened by the Chinese on each side of the Reach, where sailors can be furnished with goods, so that there is no need of their resorting to Canton, as in former years. The conveniences of docks for repairing ships are now very large, and the amount of trade carried on at Whampoa is annually increasing. The treatment of foreign visitors in the neighboring villages is also civil. Sailors who may die are buried on Dane's I. at a charge of \$10 for each body; the charge for interment on French I. is about \$60 for each grave.

The distance from Whampoa to Canton is about twelve miles, and all masters employ their own row-boats to go to and from the city, to keep their men out of harm; besides which there is a penalty of fifty dollars for permitting sailors from British ships to go up on liberty. No goods of any description should be put into these boats; nor is it legal to attempt to bring up goods in a ship's boat to Canton; for if detected and reported, the ship is liable to be immediately ordered out of the river.

Sailors coming to Whampoa are very much exposed to the enticements of low Chinese, who hold out to them every temptation to drunkenness in Bamboo-town and Newtown, and bum-boats bring liquor alongside. It is difficult to say which party is the most blameable, those who sell or those who buy, but the evils of the sale and use have come upon both, even at times to the loss of life in the disputes which have ensued. The sale of ardent spirits to foreign seamen is strictly prohibited by the Chinese government, to their praise be it said; but as is the case with most other interdicts which interfere with the interests of the natives, no obedience is paid to the prohibition by either party, the police being bribed to overlook all delinquencies. The shopmen who vend the samshoo (as the liquor is here called, and which means 'thrice fired,' or distilled), try to screen their malpractices from the passing observer, and at the same time present additional temptation to the sailor, by the show of coarse chinaware, pictures, shoes, and other articles which the latter is in the habit of buying. No sooner does a party of sailors land, than their emissaries hasten to draw them, by deceitful promises and the show of goods, into their shops, where they ply them with the intoxicating draught, rendered more deleterious than the natives ever drink it, by the infusion of poisonous narcotics. If the deluded sailor takes the cup, they then cheat him of his money, or plunder him of his apparel, and afterwards drive him into the street; and hence in days past, have often arisen outrages leading to interruption of the ship's trade, to heavy mulcts, and sometimes to wounds and homicide. One of the Regulations of British trade is intended to guard against this evil, by requiring that an officer accompany every

*Cause of much disease.**Business at Canton.**The Hoppo.*

ship's boat to look after the men; but there are hundreds of men in the ports of China over whom this restriction does not extend, and it is well for the sailor to be told that this liquor is sometimes made very sweet to disguise an infusion of oil of tobacco, sulphuric acid, cocculus indicus, or various essential oils, put in it; and that to drink it frequently induces sickness, delirium, fever, and even death in the hot season. Much of the mortality among seamen in the autumn and winter, while lying at Whampoa, is to be ascribed to their exposure and to drinking this villainous mixture; and it is probable, even with all their fondness for strong drinks, that if they knew what a deleterious compound it was, regard for their own health and lives would induce them to let it alone.

Too much care cannot be taken by masters to keep it away from the sailor, nor information too often given him of its properties, to deter him from touching it. And when too, the Chinese see sailors lying in the gutter drunk, or hear them filling the streets with uproarious and profane cries, to the great disgrace of the names of foreigner and Christian, it becomes every one calling himself by these names to interfere with authority if he can, or with persuasion, to cause the reproach to cease. There are sailors' boarding-houses at Whampoa, where food and shelter can be had, and during the last few years some have been conducted by foreigners.

Section 3.

DETAILS OF BUSINESS AT CANTON.

Before proceeding to describe the course of foreign trade at Canton, it will be proper briefly to speak of the principal parties connected with it on the part of the Chinese. The *Hoppo*, or Superintendent of Customs, is the highest officer connected with trade. He is always a Manchu, generally a member of the imperial household, and holds a special appointment from the emperor to superintend the maritime commerce of Canton, and collect the duties arising therefrom. In consequence of this special appointment, he ranks as the fourth dignitary in the province, but can assume no superiority over any but those of ordinary rank. His salary is 25,000 taels a year; but his chief emoluments are derived from fees, exactions, and percentage on the imperial duties. This latter source was formerly the most considerable of all, but since the present mode of paying duties without the intervention of the hong-merchants was established, it has been reduced to almost or quite nothing. The term *hoppo* is confined to Canton, and is a corruption of the title *hoi-po-sho*, the name of the officer who has control over the boats on the river, strangely applied to the collector of customs by foreigners. His official designation is *tuh-lí yueh hái-kwán pú tá-jín*, 督理粵海關部大人, His Excellency the manager of the maritime passes at Canton.

Attaches to the Hoppo's office. The Governor-general. Hong-merchants.

The hoppo has a head clerk called *kingching* 經承 and several writers for transacting the affairs of the general custom-house. He is also followed from the capital by a number of his Manchu countrymen, who are called *kiá jin* 家人 or domestics, and are deputed to take an account of and examine goods as they are landed or shipped; and to reside at the subordinate stations, as Kiangmun, the Bogue, Whampoa, &c. All these receive merely nominal salaries, and have in fact to purchase their situations from the hoppo. They live therefore on the perquisites arising from the foreign trade; the number attached to the office in former days was sometimes upwards of two hundred, but the re-arrangement of the trade has thrown many of them out of employ, or greatly reduced their emoluments. The details of the establishment at present are conducted by clerks called *shú-pán* 書班, eighty or a hundred in number. No fees are taken at the office upon foreign trade, except the demands regularly agreed upon, which has probably compelled the hoppo either to dismiss many of his hangers-on, or filch from the regular duties to pay them.

Connected with the hoppo in the general direction of trade and intercourse with foreigners, are the *tsung-tuh*, or governor-general of the two provinces of Kwangtung and Kwangsi, and in his absence, the *fú-yuen*, or governor of the former. By the treaty he is appointed a sort of commissioner of foreign affairs, and all matters connected with them are referred to him. All petitions from foreigners, such as those relating to grievances of a general nature, or remonstrances concerning unjust regulations, &c., were in former times sent to him through the hong-merchants, through whom also an answer was returned, which they communicated either verbally (as it was illegal to know anything of the Chinese language), or by sending in a copy of his excellency's edict to the foreign merchants; petitions relating to trade were sent to the hoppo through the same medium. The mode of communicating with Chinese officers by British consuls, was fully arranged between the plenipotentiaries of the two nations in 1843. All foreign officials now communicate directly with any of the provincial authorities in the manner mentioned in ART. XXX of the American treaty. Communications relating to unimportant matters are conveyed by the confidential clerks of the parties.

The monopoly of the *hong-merchants* having been abolished by the treaty between England and China, there is no need of here detailing the numerous annoyances and restrictions which grew therefrom, or of explaining the benefits which resulted to the foreigner from the monopoly, and its feature of responsibility in paying the debts of the wasteful or unfortunate. The new system has been found to work as well as those best acquainted with the character of the Chinese expected. Since it began in 1843, all the old hong-merchants, and nearly all their partners, have failed or retired from the business.

Linguists or Custom-house Clerks. Their Duties and Names. Chop-boats.

The custom-house clerks, called in Chinese *tung sz'* 通事 *i. e.* forwarding business men, are usually styled *Linguists*, although none of them have ever been able to read or write a line of idiomatic English, or any other foreign language, nor even able to speak anything better than the Canton-English. They are employed in all intercourse between the custom-house officers and foreign merchants, and also formerly wrote addresses and petitions to, or announced edicts from, government on behalf of foreigners. The linguists, like the hong-merchants, were formerly obliged to pay largely for their licences, and liable to heavy exactions, chiefly by the hoppo's domestics and other underlings of office; the annual expenses of one of their establishments was reckoned at 10,000 taels. The number of head linguists has been between four and six, that is those recognized by government, but each establishment contains a full complement of clerks, so that it could at the same time transact all the custom-house business of a large number of ships. They procure permits for landing or shipping of cargo, keep an account of the duties on this cargo, and transact all the petty business which falls into their hands as the mediums of communication between the hoppo's office and the merchant. They are most useful as custom-house clerks, and receive their remuneration for acting in this capacity from the foreign merchant.

The hiring of chop-boats was formerly done by the linguist, for which he used to receive a fee of \$23 for every load of imports; if however permits for two or more boats were taken out at once, the fee for each was about \$15½. It is now fixed at \$15, and the hire of the boat itself is \$12. On exports, the linguist gets no fee whatever from the foreign merchants, but he receives a bonus from the sellers of the goods, varying a little according to the sort; and frequently furnishing the chop-boats, also gets a percentage on light-erage. On imports he has nearly the same duty to attend to as on exports, and if a ship comes into port in ballast, the merchant expects him to superintend her loading free of all charge whatever, and also pay the coolie hire and other minor expenses which may be incurred out of his own pocket.

The list of the linguists' establishments as they are at present, including the hong names and official names of the partners, is as follows:

INDIVIDUAL NAMES.		HONG NAMES.		OFFICIAL NAMES.	
ATOM,	亞担	<i>Fúneo</i>	寬和	<i>Tsai Mau</i>	蔡懋
YOUNG TOM,	央亞担	<i>Shangwo</i>	生和	<i>Wú Chuen</i>	吳泉
ALANTSAI,	亞蘭仔	<i>Chingwo</i>	正和	<i>Wú Tsiáng</i>	吳祥
YOUNG AHEEN	央亞憲	<i>Shunwo</i>	順和	<i>Tsai Siun</i>	蔡俊
ACHAN,	亞贊	<i>Hingwo</i>	興和	<i>Tsau Yungtai</i>	鄒榮泰

Fees of Linguists. Their incapacity as translators. Compradors.

At the cessation of the hong monopoly in July, 1843, they were left out of the routine of trade as recognized agents, either on the part of the native or foreigner, and made a representation in consequence to the foreign merchants, by whom they were employed as custom-house clerks. Their claims of compensation were at first considered exorbitant, but after consultation with the British Chamber of Commerce, the following rates of commission were agreed upon Sept. 16th, 1847, and are now paid.

IMPORTS.		EXPORTS.	
ARTICLES.	Fee of \$6 on each Chop of	ARTICLES.	Fee of \$6 on each Chop of
Raw Cotton, Bombay, Bengal, or Madras.....	100 bales	Tea.....	300 chests
Cotton Yarn.....	80 bales of 400 lbs.	Raw Silk and Silk Piece-goods.....	100 peculs
Shirting and other Cotton goods.....	4000 pcs. 40 yds.	Nankeens, brown & blue.....	20,000 pcs.
Bombazetts, Camlets, Lastings, Long Ells.....	1400 pieces.	Alum, Cassia lignea, Buds, and Oil, Chiua and Galangal Root, Bamboo & Rattanware, Camphor, Chinaware, Copper ware, Fireworks, Hartall, Lacqueredware, Paper, Rhubarb, Star Aniseed and Aniseed Oil, Tobacco, Vermilion.....	300 peculs
Spanish Stripes and other broadcloths.....	840 pieces	Other articles in proportion.	
Iron, Lead, Spelter, Steel, Copper, Tin Plates, and all other metals.....	300 peculs		
Agar-agar, Biche-de-mer, Betel-nut, Cochineal, Ebony, Cloves, Flints, Fishmaws, Gambier, Gums, hides, Pepper, Putchuck, Rattans, Saltpetre, Sandalwood, Sapan & Red wood, Smalts, Window and Broken Glass.....	300 peculs		
Rice.....	600 peculs		
Other articles in proportion.			

It is mentioned above that one of the duties of the linguists, and the origin of their appellation, was that of translating and interpreting between the Chinese government and foreigners. In the common routine of trade, where the matter was a simple detail of business, or in cases where their own interest was not likely to be involved in any way, there was no objection to trusting to their integrity; but owing to their own ignorance, and the poverty of the wretched jargon used in communication, even with good intentions, they were liable to misunderstand and misrepresent the subject they were to write upon.

Compradors, called *mái-pón* 賣辦 are the stewards of the household of the foreigner at Canton, or of his ships at Whampoa, and in both places their duties are similar. Like the linguists, they have exactions to pay the custom-house and other officials, in consideration of which they formerly received a fee of 50 dollars for every ship, but this charge is now abolished. House compradors are employed in Canton as the head-servant and cash-keeper of the

Shroffs. House Servants. Their capabilities. Business conducted orally.

establishment, and like their fellows at Whampoa, used to receive their licenses from Casa Branca, for which they paid a certain sum. There is now no other security for them than their honesty and good character, and the profits of their position. The principal duties of a house comprador are to receive and pay out money, and keep an account of the daily expenses of the household, furnish provisions &c.; he also hires all the servants, and is consequently the security for their general good behavior.

He has in his employ a shroff, who examines all the specie received and paid out, and who, like the teller in a bank, is made responsible for the bad money he receives. In order to recognize coin once paid out, every comprador has a steel stamp, with which he strikes his name upon the face of the piece, and he will not receive a dollar back again upon which he cannot find his own stamp, or *chop* as it is called. The natives of Canton and Macao, and their immediate vicinity, are usually employed as house-servants, and for the most part perform their duties well, considering the imperfect jargon in which intercourse is carried on, and the consequent liability there is that they may misunderstand their masters. Before they consider themselves qualified to act as servants, they receive what in their opinion is a tolerable English education, which consists in committing to memory a number of words and phrases from Chinese and English vocabularies written in the Chinese character, and with the English phrase constructed according to the Chinese idiom. There are always a few men to be found in Canton who get their living by thus teaching English to the lads about the Factories and shops. This business, whatever be its amount or nature, is usually oral, no bargain being committed to writing in any way that binds the parties to fulfill their contracts, because the parties cannot understand each other's language; important contracts, leases, &c., are generally put in writing. The jargon which is spoken at Canton sounds strangely to the newly arrived foreigner, but its inverted construction is soon acquired; and it serves the purpose of carrying on the common detail of business and household affairs. The only remedy for those who dislike it is undoubtedly that of learning to speak Chinese better than the native speaks English.

Foreign trade is conducted at Canton, with great ease and regularity. The Chinese system of inland trade, through a long series of years, has acquired a high degree of uniformity in its details, and the same system is applied to their foreign trade; so that there are few ports in the world where a large trade is carried on with less trouble to the foreigner than in this. Much of this facility is owing to the exclusion of the latter from the office of the collector of customs, where the linguists perform the necessary duties; and also that all the detail in landing and loading cargo, such as hiring chop-boats, calling coolies, packing and unpacking goods in the bulk, &c., &c., is managed by natives on the orders being given to the proper persons. This restricts the actual labor to be done by the foreigner,

<i>British Consular Regulations.</i>	<i>Rules for Ships.</i>	<i>Sailors.</i>	<i>Deaths.</i>
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to examining or exhibiting samples of goods, and seeing that they are properly packed, beyond which there is almost nothing to be done out of the counting-room.

The General Regulations for British Trade and the various articles of the American Treaty (pages 201-213), contain the principal directions for carrying on trade at the five open ports. The following General Regulations, chiefly for shipping, and a Table of Consular Fees, have also been issued for observance at the British Consulates and by British subjects.

General Consular Regulations

FOR THE FIVE PORTS OF CANTON, AMOY, FUHCHAU, NINGPO, AND SHANGHAI.

I.—All Rules and Regulations, heretofore in force to secure the observance of treaties, having reference to any of the five ports open for trade in China, are repealed from and after the date of the publication of the present Regulations.

II.—The Consulate Offices shall be open for public business from 10 o'clock A. M. to 4 o'clock P. M. daily, excepting on Sundays, and those holidays upon which public offices in England are closed.

III.—Every master of a vessel shall deposit his ship's papers, together with a summary of the manifest of her cargo, at the Consulate Office within forty-eight hours after her arrival in the port or anchorage, unless a Sunday or holiday should intervene. Masters not conforming to this regulation will render themselves liable to a penalty of two hundred dollars.

IV.—Every British vessel must show her colors on entering the port or anchorage, and keep them hoisted, until she shall have been reported at the Consulate, and her papers deposited there. Masters not conforming to this Regulation will render themselves liable to a penalty not exceeding one hundred dollars for each offense.

V.—Should any vessel, the property of a British subject, but not provided with a British sailing-letter or certificate of registry, hoist the British ensign within any port or anchorage, or should she exhibit within such limits any flag so insular to the British ensign as not to be distinguishable from it, the master of such vessel will be liable for every such offense to a penalty not exceeding one hundred dollars.

VI.—In accordance with the provisions of the XII Article of the General Regulations of Trade, masters of vessels in any port or anchorage will be held accountable for the conduct of their crews on shore. Should any seaman absent himself without permission, the master shall forthwith report the same at the Consulate Office, and take efficient measures for the recovery of the absentee.

VII.—The discharge of guns or other fire-arms from vessels in harbor is strictly prohibited under a penalty not exceeding fifty dollars.

VIII.—Masters of vessels, when reporting their arrival at a port or anchorage, shall notify in writing the names of all passengers and persons not forming part of the registered crew on board; and due notice must likewise be given of the number and names of persons not forming part of the registered crew, intending to leave the port on board of any vessel.

IX.—All cases of death occurring on board of vessels in harbor, or in the residences of British subjects on shore, must be immediately reported at the Consulate Office; and in the event of sudden or accidental death the best information obtainable will likewise be required. It is strictly prohibited to throw overboard the bodies of seamen or other persons dying on board of a vessel in harbor.

Thefts. Discharging Seamen. Leaving Port. Eating-houses. Enrolling

X.—Stone or ballast shall not be thrown overboard in harbor.

XI.—All cases of loss of property by theft or fraud on board of ship, as well as of assault or felony, requiring redress, or involving the public peace, must be immediately reported at the Consulate Office. Any Chinese subject guilty of a misdemeanor on shore or afloat may be detained on detection; but information must in such case be forthwith lodged at the Consulate Office, and in no instance shall British subjects be permitted to use violence towards Chinese offenders, or take the law into their own hands.

XII.—Any vessel laden with gunpowder or any other combustible, is prohibited from entering an anchorage, or remaining within a distance from it of one mile.

XIII.—No seaman or other person belonging to a British ship may be discharged or left behind at any port or anchorage without the express sanction of the Consul, nor until sufficient security shall have been given for his maintenance and good behavior while remaining on shore. If any British subject left at a port or anchorage by a British vessel, be found requiring public relief prior to departure of such vessel from the dominions of the Emperor of China, the vessel will be held responsible for the maintenance and removal of such British subject.

XIV.—When a vessel is ready to leave a port or anchorage, the master or consignees shall apply at the Chinese custom-house for a Chinese port-clearance (grand-chop), and on his presenting this document, together with a copy of the manifest of his export cargo, at the Consulate Office, his ship's papers will be restored, and he will be furnished with a Consular port-clearance, on receiving which the vessel will be at liberty to leave the port. Should any vessel take in or discharge cargo subsequent to the issue of the grand chop, the master will be subject to a penalty not exceeding five hundred dollars, and the goods so taken in or discharged will be liable to confiscation under the terms of the General Regulations of Trade with reference to breaking bulk without due permission.

XV.—When a vessel is ready to leave a port or anchorage, the master shall give notice thereof to the Consul, and shall hoist a blue peter at least 24 hours before the time appointed for her departure. The Consul may dispense with the observance of this Regulation on security being given that claims presented within 24 hours will be paid.

XVI.—No British subject may establish either a boarding or eating house at a port or anchorage without the sanction of the Consul, or without giving proper security that he will not harbor any seaman who is a runaway, or who cannot produce his discharge accompanied by a written sanction from the Consul to reside on shore. Every licenced boarding or eating housekeeper will be held accountable for the good conduct of all inmates and frequenters of his house.

XVII.—Every British subject residing within the dominions of the Emperor of China, who shall not have been already enrolled in the Consular Register, shall apply to the Consul to be enrolled within ten days of the promulgation of these Regulations at the port in which he resides. And every British subject who may arrive in the said dominions, save and except any British subject who may be borne on the muster-roll of a British vessel, shall apply within ten days of his arrival to the Consul of the district to be enrolled in the Consular Register. No British subject will be entitled to claim the protection of the authorities who shall not so have enrolled himself, or who cannot allege valid reasons for his not having done so.

XVIII.—The term "Consul" in the preceding and following Regulations shall be construed to include all and every officer in Her Majesty's Consular service, whether Consul-General, Consul, Vice-Consul, or Consular Agent,

Fines. British Consular Fees. Those which are for Legal Services.

or other person duly authorized to act in any of the aforesaid capacities within the dominions of the Emperor of China.

XIX.—All fines and penalties imposed under the above or following Regulations shall be levied and enforced in the manner specified in Article XXXVI of the Order of Her Majesty in Council, dated the 13th day of June 1853; and all fees, penalties, and forfeitures shall be appropriated and applied as provided for in Article XXXVIII of the same Order.

Table of British Consular Fees, issued May 1, 1855.

PART I.—Fees to be taken in respect of matters in which the Consul's interposition is required by Law.

	£	s.	d.
For every declaration made before the Consul, in forms B, C, F, G, H, and L, in the schedule to the Merchant Shipping Act, 1854, with a view to the registry, transfers, and transmission of ships, interests in ships, or mortgages on ships	0	5	0
For indorsing a memorandum of change of Master upon the certificate of registry	0	2	0
For granting a provisional certificate of registry (this fee to be exclusive of fees on declarations)	0	10	0
For recording a mortgage of a ship, or shares in a ship, made under a certificate of mortgage	0	10	0
For recording the transfer of a mortgage of a ship, or shares in a ship, made under a certificate of mortgage	0	7	0
For recording the discharge of a mortgage of a ship, or shares in a ship, made under a certificate of mortgage	0	7	6
For every sale of a ship, or shares in a ship, made before the Consul under a certificate of sale	0	10	0
For inspection of the register book of transactions in ship	0	1	0
For every seaman engaged before the Consul	0	2	0
For every alteration in agreements with seamen made before the Consul	0	2	0
For every seaman discharged or left behind with the Consul's sanction	0	2	0
For every desertion certified by the Consul	0	2	0
For attesting a seaman's will	0	2	0
For examination of provisions or water, to be paid by the party who proves to be in default	0	10	0
For every salvage bond made in pursuance of 17 and 18 Victoria, Chapter 104, section 488, to be paid by the master or owner of the property salvaged	2	0	0
On disbursements in respect of distressed seamen, a commission of 2½ per cent.			

PART II.—Fees to be taken in respect of matters in which the Consul's interposition is to be given only when required by the parties interested.

For noting a protest, with certified copy if required	0	5	0
For order of survey, with certified copy if required	0	5	0
For extending a protest or survey, with certified copy if required	1	0	0
And, if it exceeds 200 words, for every additional 100 words	0	2	6
For preparing and attesting bottomry or arbitration bond	1	0	0
For attesting bottomry or arbitration bond not prepared by Consul	0	5	0
For attendance, out of Consular office, at a shipwreck, or for the purpose of assisting a ship in distress, or of saving wrecked goods or property, over and above traveling expenses, per diem	1	1	0
For attending valuation of goods, if under £200 in value	0	10	6
For attending valuation of goods, if £200 and upwards in value, for every day's attendance during which the valuation continues	1	1	0

<i>Those which are for Services requested.</i>	<i>American Consular Fees.</i>
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For attending sale of goods if the purchase money is under £200	1 1 0
For attending sale of goods if the purchase money is £200 or upwards, for every day during which the sale continues	2 2 0
Certificate of due landing of goods exported from the United Kingdom	0 9 0
Bill of Health	0 10 0
Visé of passport	0 2 0
Opening the will of a British subject, not being a seaman	1 1 0
Management of property of a British subject, not being a seaman, dying intestate, a commission of	2½ p cent.
Registration of documents, or other matters	0 2 6
And, if exceeding 100 words, for every additional 100 words	0 0 6
For every certified copy of a document not before mentioned	0 2 6
And, if it exceeds 100 words, for every additional 100 words	0 0 6
For administering an oath or declaration, including attestation of signature if required	0 2 0
For attesting a signature	0 2 0
For annexing the seal of office and signature to any document not mentioned in, or otherwise provided for by this table	0 5 0

Note 1.—No fee is to be taken for the custody of, or indorsement on, ship's articles and papers deposited with the Consul in pursuance of the Merchant Shipping Act, 1854, section 279.

Note 2.—Where any fee is fixed by the foregoing tables for any particular act or transaction, no additional fee is to be demanded for signature, attestation, or annexing seal of office.

Note 3.—The above fees, if not paid in English money, are to be calculated at the current rate of exchange.

Table of American Consular Fees, Issued June 22, 1855.

PART I.—Fees charged for duties which the law requires.

For receiving and delivering ship's papers, each ton measurement	\$0.00½
For discharging or shipping seamen at the Consulate	1.00
For every certificate, except passports, and for placing seals on the property of deceased Americans	2.00
For settling and paying over the proceeds of intestate or other estates, a commission of	5 per cent.
For delivering over property not in money from such estates before final settlement, commission of	2½ per cent.
For administering an oath or affirmation	0.25
For noting a protest	1.00
For extending a protest, { under 200 words	2.00
for every additional 100 words	1.00
For recording a document, { under 100 words	0.50
for every additional 100 words	0.10
For issuing an order for a survey	1.00
For issuing an order for the arrest or release of a seaman	1.00

PART II.—Fees charged when the Consul is requested to act.

For making copies of documents, per hundred words	0.10
For drawing a power of attorney	5.00
For preparing a bottomry or arbitration bond	5.00
For attendance at a shipwreck, or for assisting a ship in distress, or of saving property, (over and above traveling expenses) per day	5.00
For attending an appraisement, where the goods are under \$1000 value	3.00
For attending valuation of goods, where they are over \$1000, per day	5.00
For attending sale of goods, { under \$1000 purchase money	3.00
purchase money over \$1000, per day	5.00
For preparing a bill of health	2.00
For making a will, { where the property is under \$1000 in value	5.00
where the property is over \$1000 in value	10.00

*Reporting a Ship's Cargo.**Form of the Report to the Hoppo.*

As soon as the ship's papers are handed in at the Consulate, a report is sent to the hoppo. When the present system of trade first came into operation, it was required at the British Consulate that a summary of the cargo of a ship should also be furnished in order to assist in levying the duties, exhibiting the total number of packages in the vessel which paid *different* duties, *i. e.* the total weight of those articles which paid duty by weight, as cotton or iron; the measure of those which paid duty by their length, as woollens; or the number of those which paid duty by the piece, as longcloths. Since the refusal of the British government to have any further responsibility respecting the duties, this is not required, and the whole matter is settled between the consignee and the linguists.

FORM FOR ENTERING A SHIP AT THE CUSTOM-HOUSE.

Canton, — 185

To the Superintendent of Customs,

Sir,

The — Merchants — have duly reported to me that the British ship, No. — Master, anchored at Whampoa on the —; she is — Tons per Register, is navigated by a Crew of — men, and her Ship's Papers having been put into my possession in conformity with the Regulations, I hereby request that the necessary facilities may be given for her discharging.

I have, &c.,

H. B. M. Consul.

大英欽命管理通商事務駐劄廣州管事官

為照會事現據本國商人稟報於

月 日有英國第 號船名 船

主名 已到黃埔艇泊等由查按此

船牌照船可載貨 噸 毫 船上

梢人 名裝載各貨已將報單與船

牌諸件繳在本署收貯理合照會請

煩查照准予開艙起貨可也須至照

會者

右

照

會

大清欽命督理粵海關稅務

年

月

日

Permits granted.	Lighters sent down.	Duties paid when the ship goes.
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The day after this report is made, the custom-house officers will give the linguist engaged for the ship the necessary facilities for commencing the discharge of the cargo. The linguist is selected by the consignees of the ship; it is his business to keep the accounts of duties with the custom-house, both on the inward and outward cargo, hire chop-boats, and attend to the landing and shipping of goods. As soon as a ship is ready to discharge, he obtains an order from the consignee of the goods upon the commanding officer of the ship, directing him to deliver to a specified chop-boat the within named articles. The consignee of the ship countersigns all orders for goods to be discharged from his ship, and these orders furnish the material to make out the list of packages to be landed in one chop-boat.

When the linguist has received the orders upon the ship, and the list of the goods to be landed, he applies at the custom-house for permits for as many chop-boats as are wanted, and the next day they go to Whampoa, carrying one or two of his clerks to take account of the cargo, and on the morrow after, receive the goods from the ship. As merchandise is not usually landed until it is sold, the purchaser also sends a clerk to take an account of it. These lighters called *sai-kwa-peen*, are strongly built, roomy boats, with one or two partitions and a caboose astern for the accommodation of the crew, who live aboard. Goods are generally speaking carried safely in them, as they can be entirely screened from the weather, and placed under lock and key. It is advisable, however, to see that the goods are well secured when they leave the ship, especially bales of raw cotton, bundles of rattan or scrap iron, and bags of pepper, from which it is very easy to pilfer. The long practice of the boat-people in landing cargo has made them also expert in levying a percentage on bulk, which needs to be looked after.

The commanding officer sends a boat note to back the consignee of the ship, stating the marks, weight, description, &c., &c., of all the goods in the boat, which the linguist takes to other parties who may also have goods in it, and they enter in their books the quantity received from it. The linguist informs the collector of customs of the arrival of the chop-boat, and gives a list of the cargo on board, so that he can send and have it examined for the purpose of levying the duty. This was formerly done through the consul, but is now left for the owners of the cargo to manage with the collector of customs. As soon as the latter receives the detail of the cargo, he sends out his waiters to examine the goods, and estimate the total amount of duty upon the boat-load. The duty is settled upon every chop-boat, and an account is kept by the linguist of the amount until the whole cargo is discharged, when the import duties are all paid at once. If the ship takes in an export cargo, the duties on both inward and outward cargo are usually not paid till she is ready to sail; but it is entirely at the option of the merchant to pay the duty on every boat-load as it comes up, or on the whole cargo

Form of Blank for paying Import Duties.

Tonnage Dues.

at once. In paying duties, a form is furnished at the consulate, or more usually by the linguist, of which the following is a copy; the various mercantile houses sometimes keep blanks for paying import and export duties and tonnage dues, with their own names filled in.

FORM OF BLANK FOR IMPORT DUTIES.

Canton, ——— 185.

To the Government shroff, ———

We hereby pay into your hands the sum of ——— for duties noted at foot, which we beg you will hand over to the Superintendent of Customs for IMPORT DUTIES on ——— Ship, No. ——— the ——— Master.

Viz., for Inward Cargo, by chops No. ——— to No. ———	T. M. C. C.
Add 1 <i>l</i> . 2 <i>m</i> . per 100 taels for melting,	.....
Total	.....

Your obedient Servants, ———

國商人 今將第 號 船 船
主 名 應納稅銀 兩請煩查照
代繳
欽命粵海關大人查收所有貨物餉銀
數目列後
計開
另每百兩加鑄費銀一兩二錢
上
粵海關銀鋪
大寶號照
年 月 日 單

The blank for export duties is the same as this, with the exception of changing the word *import* into *export*, in both the English and Chinese. These documents, when filled up, are kept by the government shroff, or handed over to the hoppo, when he settles with him.

The tonnage dues of the ship are either paid at the same time with the import duties, or as is most frequently the case, the import and export duties and tonnage dues are all paid at once, when the ship is ready to sail. The form of blank for the tonnage dues is here given, which a ship is not required to pay at Whampoa if she enters the port loaded entirely with rice, or in ballast; and only half the rates if she is an inward-bound rice ship, and only loads an outward cargo.

Blank for Tonnage Duties. Former Port-charges. Duties are paid in Sycee.

FORM OF BLANK FOR TONNAGE DUTIES.

To — Government Shroff, Canton, — 185

We hereby pay into your hands the Sum of — for Tonnage Dues noted at foot, which we beg you will hand over to the Superintendent of Customs for our account.

British ship, No. — the —, — Master, T. M. C. C.
 Measures per register, — tons.
 Add 1 $\frac{1}{2}$ m. per 100 taels for melting,
 Total

We remain, Your obedient Servants,

國商人 今將第 號英船名
 船主名 應納船鈔銀 兩請煩查
 照代繳
 欽命粵海關大人查收是幸所有船載
 鈔餉各數列後
 計開
 該船按牌所載係 噸每噸計銀五
 錢共銀
 另每百兩加鑄費銀 一兩二錢
 共應加銀
 上
 粵海關銀鋪
 大寶號照
 年 月 日單

This blank needs to be altered slightly when only half the legal tonnage dues are paid. In the times of the hong merchants, the regular charges on every ship going to Whampoa amounted to \$2573 (which included the pilotage), besides the measurement duty, which depended on her size, and varied from \$650 to \$3000; if laden with rice only, she paid about \$1000 altogether.

Duties are paid in pure sycee, or its equivalent in dollars, to the government bankers, who give a receipt for the same. The forms given above, it will be seen, are merely notes addressed to him by the merchant, stating such particulars as are necessary, and he keeps these papers as his vouchers. All duties are settled between the

Assay of Coins. Assay at Shanghai. Costs on sycee. Kinds of Sycee.

merchant and these bankers by the linguist and comprador. The rates at which foreign coins should be taken by the Chinese government was settled from actual assay in 1844, according to the following scale:—

PROCESS OF THE ASSAY.*	Assay of 20 New Rupees.	Assay of 5 New Peruvian Dollars.	Assay of 5 New Mexican Dollars.	Assay of 5 New Bolivian Dollars.	Assay of 5 New Chilean Dollars.	Assay of 5 Dollars. Cut money.
	T.M.C.C.	T.M.C.C.	T.M.C.C.	T.M.C.C.	T.M.C.C.	T.M.C.C.
Weighted before melting.	6 2 0 3	3 6 0 0	3 5 7 5	3 6 0 0	3 5 9 5	3 6 0 0
Weighted after melting, remelting, and cast into a shoe of pure sycee,	5 6 5 0	3 2 3 0	3 1 9 5	3 2 1 0	3 1 9 5	3 1 8 0
Loss of weight	0 5 5 3	0 3 7 0	0 3 8 0	0 3 9 0	0 4 0 0	0 4 2 0
	Rupees.	Peruvian.	Mexican.	Bolivian.	Chilean.	Cut money.
Value of 100 taels' weight of each coin,	91 0 5 8	89 7 2 2½	89 3 7 1	89 1 6 7	88 8 7 0	88 3 3 4
Difference between 100 taels' weight of coin and of pure sycee,	8 9 1 5	10 2 7 7	10 6 2 9	10 8 3 3	11 1 3 0	11 6 6 6
Amount of coin to be paid to equal 100 taels of pure sycee,	100 7 9 0	111 4 5 5	111 9 0 0	112 1 5 0	112 5 2 0	113 2 0 7

The expenses of melting, remelting, &c., &c., amounting to a charge of 1 tael 2 mace for every 100 taels, must be added to the last amount, and also a small percentage of 4 mace 5 cand. in every 100 taels for the difference between the scales at the custom-house and those used by the shroff in the assay. Not quite so much however as 4 m. 5 c. is actually paid, but only 2 m. 3 c., making about 1½ per cent. more than the nominal duty as the real duty. It will be seen from this assay, that until sycee rises to 10 per cent. premium, it is a more advantageous medium for the foreign merchant to pay duties in than any kind of foreign coin. The usual premium for this kind of bullion at Canton has been from 6 to 8 per cent. during the last few years.

The qualities of sycee silver chiefly current and most known in this market are four.

1st. The 藩庫錠 *Fàn-kú ting*, or bars of silver from the Pú-ching sz' treasury.

* An assay recently made at Shànghai gives a result slightly different from this, as will be seen by comparing the two. "Whereas, an assay of the touch of various new foreign coins was made at the custom-house by myself, the prefect, and district magistrate, in the presence of the Consuls of the Three Nations, it is my duty to make public the result of that assay for general information."

N. C. Herald, Nov. 8, 1855.

PROCESS OF THE ASSAY.	3 Mexican Dollars.	3 Peruvian Dollars.	3 Bolivian Dollars.	3 Rupees.	3 French Dollars.	3 Carolus Dollars.
	T.M.C.C.	T.M.C.C.	T.M.C.C.	T.M.C.C.	T.M.C.C.	T.M.C.C.
Weight before Melting, . . .	2.13.0	2.06.0	2.12.0	0.93.0	1.98.0	2.13.5
Weight after Melting, . . .	1.90.0	1.84.0	1.91.0	0.84.0	1.75.0	1.93.0
Alloy in each Coin, . . .	2.3.0	2.2.0	2.1.0	9.0	2.3.0	2.0.5
Amount of Coin to be paid to equal 100 Tls. of pure Sycee.	112.1.1.0	111.9.5.7	111.2.5.5	110.7.2.0	113.1.5.0	110.6.2.2

Bankers.	Storehouses.	Rates of Storage.	Construction of Go-downs.
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2d. The 元寶錠 *Yuen-páu ting*, or large shoe-shaped ingots of sycee. (These two kinds are received as pure silver.)

3d. The 關餉錠 *Kwán-hiáng ting*, or hoppo's sycee, which is commonly at a small discount varying from 1 mace to 5 mace per 100 taels, or $\frac{1}{10}$ to $\frac{1}{2}$ per cent. on pure silver.

4th. The 鹽餉錠 *Yen-hiáng ting*, or salt commissioner's sycee, which is commonly at a small discount, varying from 5 mace to 1 tael per 100 taels, or $\frac{1}{2}$ to 1 per cent. on pure silver. Other kinds and qualities are met with in small parcels, but the above four kinds are the principal.

The names of the shops or firms, where the duties are taken on foreign imports and exports are Hangmow, 恒茂 and Hopshing 合盛. The shop Kwonghang 廣恒, by whose partners the above assay was made, is within the city.

When import cargo is to be landed, the seller agrees with the purchaser where it is to be stored, and an allowance for the storage is made in settling the transaction. Formerly, it was impossible to rent any of the spacious go-downs under the control of the hong-merchants, but several of them are now used by foreigners. The rates of storage in those which receive goods do not vary much from the following table; some of the large foreign Houses have their own, and cargo of most kinds can be insured in them.

Imports		cents.	
Raw Cotton,	- - - - -	5	per bale per month.
Tin, Copper, &c.	- - - - -	5	per pecul per month.
Lead, Steel, Iron,	- - - - -	3	per " "
Ginseng, Guins, Cloves, &c.	- - - - -	5	per " "
Sandalwood and other woods,	- - - - -	4	per " "
Rattans, Betelnut, Rice, Pepper, &c.	- - - - -	3	per " "
Cotton Yarn,	- - - - -	5	per " "
Camlets, Long Ells, Lastings, &c.	- - - - -	15	per bale " "
Spanish Stripes, &c. (6 pieces)	- - - - -	15	per " "
Longcloths, Cambrics, Chintzes, &c.	- - - - -	$\frac{1}{2}$	per piece " "
Do. after 1st month {		20 to 30 pieces.	10 per bale " "
		40 to 60	20 per " "
		80 pcs. and upwards,	30 per " "
Exports			
Raw Silk,	- - - - -	25	per per bale per month.
Tea, chests,	- - - - -	3	} each per month.
Half chests,	- - - - -	2	
Boxes,	- - - - -	1	

Laying down, weighing, and examining Tea, 5 candareens per pecul.
Chop boats sent down to Whampoa for cargo with servants in charge.

Goods are occasionally landed to be stored in the packhouses of the native merchants before they are bona fide sold; but the actual purchaser settles all charges of storage with the owner of the warehouse. These buildings are of brick, situated on both sides of the

*Loading a Ship.**Linguist's Duties.**Risks in Packhouses.*

river, and resemble a succession of rooms without any partitions; they are only one story, and the rooms where the goods are stored have no floors. The ground is *chunamed*, or made with a hard finish of sifted sand mixed with fresh lime and wood oil, beaten smooth. Goods of a delicate nature are liable to mold in them, but merchandize generally is kept securely. The old hong's were precisely the same sort of buildings, but since the war, the present tea traders have had them fitted up with sleeping-rooms and offices, where their clerks and coolies lodge, and business is transacted. Goods are stored, packed, and shipped off from the hong's to a large amount; while the *chán-fong*, or packhouses, are also used for manufactories or workshops, where workmen prepare the tea, silk, or other articles for market. Owing to the great risk there is in Canton from fire, and the high rates of insurance, and the difficulty of saving property in times of danger, foreigners have avoided having many of their own goods at Canton; all the go-downs open on the river in order to facilitate the landing and shipping, which makes it easier to save property in case of fire.

When a ship has discharged her cargo according to the manifest, she can leave the port as soon as all duties and fees are paid, without taking any export cargo. When loading a ship, the consignee tells the linguist where the goods are, their number, sort, &c., and he takes an account of the same in order to draw up a report to present at the hoppo's office, and procure a permit for them to be shipped. The next day, the custom-house clerks come to inspect and weigh them, and settle the amount of duties to be paid upon the whole. The linguist makes his report to the hoppo's office, where all the accounts for duties, lighter-permits, and tonnage dues, are kept until the ship is loaded, and the duties are all paid up. They are the documents by which the amount of import and export cargo is ascertained, and the duties levied thereon, and when the linguist applies for the port-clearance, he hands them all to the hoppo, who keeps them among the records of his office. In case of any dispute between the various parties engaged in the ship's business, they are referred to in settling the question.

As soon as the goods are put on board the lighter, she leaves for Whampoa, and the second day after making application to ship off cargo, they are taken into the ship. The officer returns a receipt by the linguist's clerks, or by the coolies whom the seller of the cargo sends in the boat to prevent any fraudulent exchange of packages. Both in exporting and importing cargo, there is usually a boat-load of sundries at the end, which is called the *chowchow chop*; this for convenience sake, is frequently examined at the factory of the consignee, but differs in nothing from any other chop, except in being a little more miscellaneous.

In loading teas, the captain of the ship should keep a good oversight upon the Chinese stevedores, lest they place the dunnage carelessly, deface or mar the chests, or get the ship out of trim. The

*Oversight of boatmen.**Stowing Silks.**Transshipping Cargo.*

ballast should be of small stones (always obtainable at Whampoa), and covered with boards so as not to touch the teas, while boards or split bamboos should be placed between the chests and the ship's side. If the boards on which the chests are slid into the hold are too greasy, or the coolies use the maul to drive them into their place without a board to save the stroke, or walk over them, the chests are liable to be marred and rendered less saleable. Sometimes the cargo can be taken in so as to put the heaviest teas, as Gunpowder, Imperial, or Hyson at the bottom, and Flowery Pekoe or Oolong at the top. It is well for the cargo to be ventilated all it can be while being taken in lest some of the chests sweat. The sample chests marked "*muster*" should be laid aside until the cargo is all in, and then stowed where they can be reached as soon as the ship arrives in her destined port. Silk goods in American ships generally pay a freight nearly double to that on teas, and are stowed in a sort of trunk formed by the coarser cargo in the hold near the main hatchway, in order to protect them from leakage, and save them from injury as long as possible in case the ship is stranded or springs a leak. Raw silk is also stored more carefully than less valuable cargo. Anise or cassia oil and camphor are always carried on deck in tea ships, secured as safely as possible; matting, rattan-ware and fire-crackers are stowed upon teas; cassia in mats is stowed in with the chests to fill up the corners.

In taking in cargo, the receiving officer should not be interrupted, for he has need of all his carefulness to see that the coolies in the chopboat do not slyly pass up a chest with two tallies stuck in it, or slip a package off sideways from the board after it has been reckoned. He should also see that the cases have not been broken open on the way down from Canton, and patched up again.

Transshipping goods at Whampoa was formerly attended with great expense, for whatever merchandise was thus transferred, was charged with the same duties as if it had been brought to Canton, the Chinese government looking upon the transaction in the light of a sale by one ship to the other. This matter has been regulated by ART. XIV of the American Treaty; small packages are transhipped without difficulty. If, through the miscalculation of the stevedore in estimating the spare room, or the want of oversight in the captain, more goods are sent down from Canton than can be received on board, they can be transferred to another vessel if a report is made through the consul to the Chinese officer; but the formalities are tedious and troublesome, and care should be taken to avoid the necessity. Commonly, transshipments of both imports and exports are made at Whampoa without reference to the Chinese authorities, but the amount is not very large in the course of a year. There are large hulks or chops anchored there for storing goods, and unsaleable cargo can readily be sent at convenience to any other port. Exports coming from any of the five ports are now usually transhipped at Hongkong.

*Manifest of Outward Cargo.**Form of Blank for Clearance.*

When the cargo is all on board, the consignee applies for the port-clearance through the consul, who requests of the hoppo to know the amount of duties, &c., which are due. This list of cargo is furnished by the consignee, or captain to the consul, and a regular outward manifest is also made and signed by the master before the consul. The particulars of the cargo of each ship are entered upon the books of the Consulate, from which the periodical returns of trade are made up.

FORM OF APPLICATION FOR THE GRAND CHOP.

Canton, — 185

To the Superintendent of Customs,

Sir,

The — Merchants — have duly reported to me that the British ship, No. — Master, has completed the lading of her cargo outwards, and is now ready to proceed to sea. I have therefore to beg you will ascertain the amount of Import, Export, and Tonnage Duties for which she is liable, what amount is already paid, and what still remains unpaid, in order that her Grand Chop may be granted without delay, and the vessel proceed on her voyage accordingly.

I have, &c.,

H. B. M. Consul.

大英欽命管理通商事務駐劄廣州管事官
為照會事現據 國商人 赴案投
遞出口報單稟稱英國第 號船
船主名 今已滿載定期回國理合
先行報知代請查核船鈔及出口各
貨稅銀若干兩已納者若干兩以便
完納發給紅牌准予行駛回國實為
公便為此照會須至照會者

右

照

會

大清欽命督理粵海關稅務

年

月

日

By ART. XX of the American Treaty it is provided that goods imported into any one of the five ports, and having once paid duty, can be re-exported to either of the other ports and landed for sale without paying duty a second time. Goods are constantly sent from one port to another, by informing the collector of customs of the facts of the case according to the following formula.

*Form of blank for Re-exporting Goods.**Particulars to be stated.*

FORM OF BLANK FOR RE-EXPORTING IMPORTS.

*To the Superintendent of Customs,**Canton, — 185**Sir,*

The — Merchants — have represented to me that they desire to ship and send to — for sale the undermentioned Goods, and have requested me to apply to Your Excellency for a Certificate of the Receipt of the Duties thereon, in order to prevent their being levied a second time. This application is accompanied by a statement of the quantity of the Goods, and of the particulars relative to their importation, which I now subjoin; and I have the honor to request that you will, after verification of the same, issue the Certificate required, sending it to this Consulate for transmission to the said Merchants.

PARTICULARS REFERRED TO ABOVE.

Name, Number, and National Flag of Vessel in which the Goods were imported.	The Vessel, the being No. of the year 185
Denomination of Goods.	
Number and Description of Packages.	
Weight, Measure, or Custom's valuation of Goods.	
Amount of Duty Paid.	Taels, Mace. Cands. Cash.
Date of payment.	

I have &c.,

H. B. M. Consul.

大英欽命管理通商事務駐劄廣州管事官
 爲照會事現據 國商人 稟稱商
 欲將 前時帶來之貨物 今仍 載出口
 運往 前時銷售請爲 移明 發給 收稅 憑
 照俾免 重征等情并據 開列 貨數 及
 進口各緣由前來 據此 合將 該商 開
 列貨數及進口各緣由 叙明 於後 照
 知貴關部希爲 查明 屬實 然後 發給
 收稅憑照 移來 本署 轉發 該商 可也
 爲此照會 須至 照會 者
 計開

大清欽命督理粵海關稅務
 年 月 日

會

*Form of Cargo Report.**Blanks used in American trade.*

It has been customary in the American trade to make out the export cargo of a ship from the report which the linguist gives in, taken from the account he has kept while she was loading. The details of a cargo are also often circulated in manuscript for general information, drawn up somewhat according to the following schedule, which are also preserved in books kept for the purpose.

Ship, No. —

REPORT of the Export Cargo of the ———, ——— Commander,
bound for ———, to sail ——— 185

TEAS.	Chests.	Half Chests.	20 Catty Boxes.	13lb. Bxs.	6lb. Bxs.	24lb. Canister Boxes.	Total Pounds in this vessel.	Total pounds since 1st July, 185
Young Hyson - - -								
Hyson - - - - -								
Hyson Skin - - -								
Twankay - - - - -								
Gunpowder - - - -								
Imperial - - - - -								
Green								
Powchong - - - - -								
Souchong and Congou								
Pekoe - - - - -								
Orange Pekoe - - -								
Caper - - - - -								
Ningyongs and Oolongs								
Blacks								
Total								
SILKS, &c.	Total in this vessel.	Total since 1st July, 185	SUNDRIES.			Total in this vessel.	Total since 1st July, 185	
Pongees - - - Pieces			Matting -	Rolls				
Sarsnets - - - - "			Rhubarb -	Boxes				
Senshaws - - - - "			Sweetmeats -	"				
Camlets - - - - - "			Vermilion -	"				
Lustrings - - - - "			Pearl Buttons	"				
Satins - - - - - "			Chinaware -	"				
Satin Damasks - - "			Fire Crackers	"				
Satin Levantines - "			Star Aniseed -	"				
Crapes - - - - - "			Lacquered-ware	"				
Gauze - - - - - "			Cassia Buds -	"				
Serge - - - - - "			Oil Cassia -	"				
Crape Shawls & Scarfs			Oil Anise -	"				
Levantine Handkerchiefs			Split Rattans	Bdls.				
Pongee Handkerchiefs			Camphor -	Peculs				
Sewing Silk - - - Peculs			Cassia - - - - "					
Raw Silk - - - - - "			China-root -	"				
Nankeen - - - - - Pieces			Gamboge -	"				
Grass-cloth - - - - "			Tin - - - - - "					
Fans and Screens	Boxes		Sugar - - - - - "					

When the duties are paid to the custom-house, the collector grants a port clearance, a *hung-pái*, red permit, or grand chop as it is called in Canton. This document is received in other countries as a valid

Grand Chop. Law about shipwrecked crews. Character of people on the coast.

certificate of legal departure from Canton, though it will be seen from the translation that it does not exactly correspond to a port-clearance:—

“—by imperial appointment, superintendent of customs at the port of Canton, &c., &c., grants this is obedience to an imperial order to the effect following:—‘European ships having paid the dues of tonnage, &c., if by contrary winds or water they should be driven to any other province, not with design of remaining there to trade, shall, provided it be found that they possess a certificate, properly sealed, of their having paid such tonnage dues, be immediately permitted to depart, without any further exaction of charges. This decision is on record.’

“Now the foreign ship’s merchant ———, having taken on board cargo, is about to sail to ——— to trade; the tonnage dues, &c., have all been paid according to law; and this document is therefore given into the hands of the said ship’s merchant, for the examination of those whom it may concern. Should the ship reach any pass, barrier, or other place where examination is used to be made, on presenting this, she must be allowed to proceed, without paying further charges or duties, or suffering any distress, stoppage, or hindrance.

“The arms carried for the defense of the ship, according to old regulations, have been ascertained, and a list made, as hereinafter inserted. No more are permitted to be carried, nor may any contraband articles be taken on board; a violation hereof will bring on the parties an inquiry which they will find inexpedient.—A necessary document.”

[Here follows a list of scamen, arms, &c.]

The above provides for the free admittance into any port of vessels driven thither by stress of weather. The following is the law with respect to shipwrecked foreigners, given in the form of an imperial edict, dated the second year of Kienlung, A. D. 1737.

“Along the whole extent of our coast, it continually happens that foreign ships and people are driven on shore by gales of wind. It is hereby ordered, that the governor generals and governors of provinces take the lead, and cause officers to be particularly attentive in affording compassion; that they employ the public money to bestow food and raiment on the sufferers, and to refit their ships: after which, that they cause their goods to be returned, and see that they are sent home to their own country. This is done to manifest the extremely tender feelings of my imperial mind toward men from remote regions. Take this order and command it to be an everlasting law. Respect this.”

It is observable that this humane law provides relief for all distressed men, and there is hardly a year when Japanese, Korean, Lewchewan or Annamitic, boats or junks, are not wrecked on the coast of China, whose crews are always taken care of by the nearest officer where they land, and maintained and forwarded to a port where they can reach home, at the public expense. The crews of foreign ships have also been received and forwarded to the nearest port, when they have been cast on the shores of China. There is a great difference, however, in the treatment shipwrecked mariners receive from the inhabitants along different parts of this coast. From Hainan to Amoy, the people have a bad reputation, and are likely to plunder the wreck and crew as soon as they can reach them, but life is not often taken. From Fuhchau to Shanghai the people are more civil to the distressed, but the good intentions of this rescript of the emperor Kienlung are not very often carried out by his subjects.

Grand chop formerly kept back. Lorchas and steamers. The Factories.

In former days, difficulty was sometimes experienced in getting the grand chop, from the hong-merchant's inability or dilatoriness in settling the ship's accounts; or it was kept back by the custom-house officers for the purpose of extorting money from them. The present arrangement has removed all unnecessary detention in this particular; and in short, the whole detail of the trade as at present remodeled, and particularly all that relates to paying the duties, is a great improvement on the old co-hong system.

The port-clearance having been obtained, the captain presents himself at the Consulate; and when all the fees and fines due from the ship are paid, his outward manifest signed and sealed by the consul, and his ship's papers all returned, he can leave the port. The pilot is obtained by merely sending for him at Whampoa, and telling him when to go aboard ship.

The rules here given for conducting the business of a ship at Canton apply to all nations, most of whom have consuls residing at the port. In respect to lorchas and steamers which come up to Canton with cargo and passengers, there is less regularity. The former pay tonnage duty perhaps once or twice, but the small sized steamers not at all; they all usually load and unload their freight without application to the hoppo, paying a fee to one of his tide-waiters stationed in a custom-house boat opposite the Factories. If the hoppo require it, they report their cargoes, and land or take in goods from the chop-boats under the supervision of a linguist. Steamers and ships drawing 12 or 13 feet easily come up the river to the city.

Since the remodeling of the foreign trade at Canton, and the abolition of the hong monopoly, it yet retains many of its former features, and the dealers in particular articles still keep up their old branches of trade. Some caution is necessary in conducting business with the crowd of petty tradesmen who deal with foreigners; but owing to the mutual ignorance of each other's language, the greatest portion of the trade is conducted without legal contracts, the parties settling their engagements by paying the bargain-money. The residences of the foreign merchants at Canton still retain the name of Factories (so called formerly from being the abodes of factors), and are all situated along the river bank at the southwest corner of the city. They furnish no room for storing goods, and hardly enough for accommodating their inmates. Rents are consequently very high, from \$1200 to \$2000 being paid for a single house, and from \$1000 down to \$500 for parts of factories.

Hongkong a Free Port. Article of Treaty. Regulations about Lorchas.

Section 5.

PORT OF HONGKONG.

THIS island and the harbor are under the jurisdiction of the English government; the port of Victoria is situated on the north side of the island, and is free alike to the ships of all nations. There are no port-charges or dues levied on goods or vessels, and ships discharge, tranship, and load their cargoes without the intervention of any officer, or rendering any account of their manifest to the local authorities. Many vessels are owned in Hongkong which trade with Macao, Whampoa and Canton, and also along the coast, under the protection of a sailing-letter furnished by the government. These vessels are allowed to enter the port of Canton under certain regulations provided for in ART. XVII of the Supplementary Treaty of the Bogue, Oct. 8, 1843, which is as follows:—

“XVII. Small English vessels, such as schooners and cutters, yawls, or fast-boats, of every kind, have hitherto been subject to no duties; it is now agreed upon, that all such vessels going from Hongkong to Canton, or from Canton to Macao, with the exception of the letters and packages, and passengers' baggage, which according to the old regulations were exempted from duties, if laden with merchantable goods, whether for import or export, or whether with full or half lading, even to a hundred weight of cargo, such vessels, according to their tonnage shall pay duties, as agreed upon. But these small vessels are not to be put upon the same scale with large foreign ships; moreover they clear out and in several times in the course of a month; also they differ from the large foreign ships which anchor at Whampoa only; so that if they should be called upon to pay duties like the large foreign ships, it would necessarily be inconvenient and improper. Henceforth, therefore, these vessels shall be classed in the following manner: the smallest of them shall be rated at 75 tons, and the largest of them at 150 tons, and every time they enter port they shall pay one mace for every ton; those which do not amount to 75 tons shall be reckoned at that rate; and those above 150 tons shall be considered as large foreign vessels, and according to the new regulations pay five mace for every ton. With respect to Fuhchau and other ports, as there are no small vessels of this kind coming and going, it is not necessary to make any regulations.

“The following are the rules by which they are to be regulated:—

“1st.—Every British schooner, cutter, lorch, &c., shall have a sailing letter or register in Chinese and English under the seal and signature of the chief superintendent of trade, describing her appearance, burden, &c., &c.

“2d.—Every schooner, lorch, and such vessel, shall report herself, as large vessels are required to do, at the Bocca Tigris; and when she carries cargo, she shall also report herself at Whampoa, and shall on reaching Canton, deliver up her sailing letter or register to the British consul, who will obtain permission from the hoppo for her to discharge her cargo, which she is not to do without such permission under the forfeiture of the penalties laid down in the III^d clause of the General Regulations of Trade.

“3d.—When the inward cargo is discharged, and an outward one if intended taken on board, and the duties on both arranged and paid, the consul will restore the register or sailing-letter, and allow the vessel to depart.”

The Sailing Letter now furnished differs somewhat from that issued soon after the promulgation of the Treaty, and is renewed at

<i>Sailing Letter.</i>	<i>Trade at Hongkong.</i>	<i>Rates of Freight to Canton.</i>
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least annually, and sometimes semi-annually. The form at present issued is as follows:—

CERTIFICATE OF BRITISH REGISTRY.

This is to Certify, That — having made and subscribed the declaration required by law, and having declared that — sole owner in the proportions specified on the back hereof of the ship or vessel called the — of —, which is of the burden of — tons, and whereof — is master; and that the said ship or vessel — and — having certified to me that the said ship or vessel has — and — masts; (Here follows a minute description of the vessel). And the said subscribing owner having consented and agreed to the above description, and having caused sufficient security to be given as required by law, the said ship or vessel called the — has been duly registered — at the port of Victoria in the Colony of Hongkong.

Certified under my hand at Government — in the said port of Victoria in Hongkong aforesaid, this — day of — in 18 — there being no collector or controller of customs in the Colony of Hongkong.

Governor and Com.-in-chief of the Colony of Hongkong.

Registered under Ordinance No. —

Issued annually.

Colonial Secretary.

The trade of Hongkong with Canton is annually increasing, goods being now easily and safely sent to and fro between the two ports by lorchas and steamers, and at a reasonable expense. The charges at present are based nearly on the following rates:—

Alum	per picul	\$0.10	Preserves	per case	\$0.25
Anised Oil	case $\frac{1}{2}$ picul	0.25	Provisions, salt	tierce	0.50
Betel Nut	picul	0.15	Do. Do.	barrel	0.30
Biche-de-mer	picul	0.25	Quicksilver	flask	0.50
Bird's Nests	picul	1.00	Rattans	picul	0.25
Bombazettes, Cambrics	piece	0.01 $\frac{1}{2}$	Raw Silk	bale	1.00
Broadcloths, Spanish Stripes	bale of 6 pcs.	0.50	Do.	case \$0.50 a 1.00	
Camlets	piece	0.05	Do. Punjam	case	0.75
Do. imitation	piece	0.01 $\frac{1}{2}$	Rhubarb	picul	0.30
Camphor	picul case	0.30	Rice & other Grains	picul	0.12
Cassia Oil	case $\frac{1}{2}$ picul	0.25	Rosin, Pitch, Flour, &c.	barrel	0.25
Cassia	box	0.25	Saltpetre	bag of 2 mds.	0.25
Chinaware	case acc'g to size 30 cts: a	1.00	Sandal Wood	picul	0.30
Cloves	picul	0.25	Sapan Wood	picul	0.20
Cochineal	box or seroon	2.00	Shark's Fins	picul	0.30
Copper & Yellow metal	box	1.50	Shirtings, Muslins &c.	piece	0.01 $\frac{1}{2}$
Do.	picul	0.12	Silk Piece Goods	case \$0.50 a 1.50	
Corallians	box	2.00	Do.	ton of 40 feet 3.50	
Cotton Raw, Bengal	bale	0.35	Spelter	picul	0.12
Do. Bombay	bale	0.50	Steel and Tin Plates	box	0.25
Cotton Yarn	bale	1.00	Sugar	picul	0.20
Cotton Cloth, Drills, &c.	piece	0.01 $\frac{1}{2}$	Tea	ton of 40 feet 1.50	
Drugs and Oil	box $\frac{1}{2}$ picul	0.25	Do. under 5 tons	{ chest	0.30
Do.	box of a picul 0.40			{ half chest	0.20
Elephant's Teeth & Ivory	picul	1.00		{ box	0.03
Ginseng	cask	1 a 1.50		{ picul	0.12
Grasscloth	case by size .25 a 0.75		Tin		
Gums and Cow Bezoar	box	1.50	Treasure and precious stones	$\frac{1}{2}$ per cent.	
Iron and Lead	picul	0.12	Velvets	piece	0.02 $\frac{1}{2}$
Lacquered Ware	acc'g to size .50 a 1.00		Vermilion and Brass Leaf	box	0.25
Long Ella	piece	0.02 $\frac{1}{2}$	Watches, Clocks	case	2.00
Musical Boxes	case	2.00	Wine, Beer, Spirits	case of 3 a 4 doz.	0.35
Nutmegs	picul	1.00	Do.	case of 1 a 2 doz.	0.25
Pepper	picul	0.15	Do.	hogshead	1.50
			Do.	pipe	2.00

Chow-chow cargo, if over 10 tons, at \$2.00 per ton of 40 cubic feet.

The great increase of the passenger traffic between Victoria and Canton and the towns in their neighborhood, and especially the great emigration to California and Australia, most of which centres at Hongkong, has greatly enlarged the commerce of the colony within the last four years.

<i>Limits of Port.</i>	<i>Foreign Dwellings.</i>	<i>Articles of Trade.</i>	<i>Fuhchau.</i>
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Section 6.

PORT OF AMOY.

AMOY is the most accessible of all the five ports, and no pilots are required either in entering or departing, if the sailing directions given on pp. 43-45 are carefully observed, though boatmen frequently board ships to offer their services. The limits of the port as defined by the Chinese authorities, are within lines drawn from the southernmost point of Amoy island southeastward to the island nearest to it, and thence in the direction of the high pagoda on Lam-tai-hoo hill; and from the northernmost point of Amoy island to the opposite point on the mainland. All the islands and waters between these lines are therefore included within the limits of the Port, outside of which no loading or discharging of cargo may be carried on, but properly speaking such operations are confined to the inner Harbor, between Kulongsu and Amoy. Some regulations were formerly issued requiring British merchantmen to engage pilots from and to the Chau-chat rock, but it is now optional. The foreign residences are all situated on the eastern shore of the harbor, and offer every advantage for storing and shipping goods in the warehouses and jetties contiguous to them.

The island of Kulongsu lies opposite the city, where gardens and walks have been laid out by the foreign residents. The mode of conducting business is simpler than at Canton; the Consular and Shipping Regulations given in Section 4th, as well as the blanks for entering ships through the Consulates, and reëxporting merchandise, are applicable to Amoy. The merchant pays the duties at the custom-house, to the *hai-kwán*, or collector of customs, who is a Manchu appointed by the *tsiáng-kiun* at Fuhchau.

The exports at Amoy consist chiefly of chinaware, kittysols, sugar, grain, medicines, alum, tea, &c., most of which goes to Singapore and Siam. The imports consist of raw cotton, opium, cotton yarn, metals, cotton and woolen fabrics, and Straits' produce. The total value of the legal trade in English vessels during 1855 was over \$1,800,000, which is probably about two-thirds of the entire foreign commerce.

Section 7.

PORT OF FUHCHAU.

THE foreign trade at Fuhchau is of very recent growth, for though the port was opened in 1843, the local authorities opposed all trade at it, and it was not until the year 1853, after Shanghai had been captured by the insurgents, that attention was directed to it as an outlet for the Souchong and Congou teas raised in the Bohea Hills, which usually had been taken to Shanghai. The teamen began to

Tea the chief export. Weights. Bank Bills. Warehouses. Limits of Port.

bring their stocks down to the headwaters of the R. Min and thence to Fuhchau; and the next year, Oolung teas were also taken there. Opium previously had been sold at the station below Kinpai Pass, and a few cottons and woollens had been bartered at the city itself, but the whole trade hardly occupied the time of the two or three agents living there, until this diversion of the tea took place; being once opened it is not likely again to be closed. The tea is brought in open boats, protected by matting, and reaches Fuchau in excellent condition, where it is stored in warehouses to be made ready for exportation. The foreigner sends it aboard ship at Pagoda Island in his own covered boats, under charge of servants, and pays the duty himself at the custom-house through his comprador. The Canton men in the employ of the foreigners usually interpret and conduct the business with the teamen, as well as with the officials and others at Fuhchau, who are ignorant of English. The consul merely reports the ship on her arrival, and her grand chop is issued as soon as the duties are paid. The *tsiáng-kiun*, or Manchu commander-in-chief, has charge of the customs, and receives them by his deputy, usually called the *hái-kwán*, at the office on Chun-chow.

The local weights at Fuhchau are catties and peculs, but the catty is the same weight as the English pound; and the pecul only 100 *lbs. av.*; the custom-house standard of 133½ *lbs. av.* to the pecul is gradually coming into use, but shipmasters and others should inquire what weights are used before they settle their purchases. Payments for small articles and incidental expenses are made in paper money, issued by local banks in sums of 300, 400, 500, or 1000 cash and more; their value fluctuates from 1600 to 2200 cash for a chopped dollar; copper and iron cash vary from 1500 to 1800 for a dollar.

The city of Fuhchau is situated about three miles from the river, and connected with it by a closely built suburb called Nantai. The river here runs nearly east, and the city is on the north bank. At the end of the suburb is the islet of Chun-chow, connected by a short bridge with it; and on the opposite shore is a longer bridge, joining the islet with a far larger island, which extends miles above and below the city. The small island is entirely covered with houses, and is not unfrequently overflowed in freshes. The foreign merchants have offices or godowns on the opposite south bank; the British Consulate was formerly located on a hill within the city, where a temple and its inclosure had been set apart by the authorities for their use; it and the American Consulate are now south of the river. Few foreigners now reside within the walls.

The anchorage at Pagoda Island is twelve miles from the city, though the limits of the port of Fuhchau extend from the Bridge to Kinpai Pass. The rates of pilotage are one dollar a foot from the White Dogs to Sharp Peak, where a river pilot boards the vessel; and receives likewise one dollar per foot to the anchorage at Pagoda I., all exclusive of charge for tow-boats. Small vessels, like lorchas or schooners, go above this point, and pay no pilotage.

Limits of the Port. Navigation of the river. Pilotage. Exposure to sun.

Section 8.

PORT OF NINGPO.

NINGPO has now the least trade of either of the five open ports; it has however steadily and gradually increased since the place was opened to foreign ships in 1843. During the year 1855, the legitimate trade was greatly interfered with and diminished, owing to the pirates which infested the coast, and to the disturbances produced by the civil war in Chehkiáng and Kiángnán. The port of Ningpo begins at the mouth of the river, and "includes all the portion of the Yung or Ningpo river comprised within a line from the northern extremity of the Chínhai promontory, called by the Chinese Chau-pau-shan, to the islet known variously as the Inner Triangle, the Pasyen I., and the Hu-tsun-shan; and a second line running from the said islet to the northern base of the hill on the eastern side of the mouth of the Yung river, known as Lookout Hill." Within these limits only can the loading or discharging of cargo legally be done. The sailing directions on page 100 are plain for going to the city, a mid-channel course and no dangers. The rates of pilotage are \$3 from and to Square Island, and \$10 from and to Chusan I. In entering the mouth of the river, there is liability to calms and strong gusts from the hills, and unless there is a leading or easterly breeze, the ship had better be dropped up with the tide to above the fishing-stakes, for between them and the Rock at the entrance on the port bow, there are many sunken junks and much stone ballast, which render it unadvisable to anchor. The pilots are generally inefficient, though some are in training who may by and by become capable, and receive certificates from the consul. Ships drawing not over fourteen feet water, enter with little difficulty; they should take the channel south of the Triangle Is., at about a cable's length off. The spit of sand on the northwest point of the Middle Triangle has increased in elevation since Collinson's survey, and a wide berth must be given it, when a ship comes through the Middle Channel; heed must be taken, too, of the spit off the east side of the Inner Triangle. The North Channel is suitable only for vessels of light draught, and then at the top of the tide; the nearer the Tiger's Tail Rock the deeper the water.

Shipmasters at Ningpo should be careful to have their water brought down from six or eight miles up the river, as the stream is brackish off the city, and the boatmen will declare that their tubs are filled high up, when to save labor they have loaded them just beyond the walls. Residents use rain water, which cannot be had in quantities for ships' tanks; many crews have been attacked by diarrhoea from drinking bad river water. In winter, Malays and Lascars are liable to suffer from frozen hands and feet, and often injure themselves by putting these members in hot water to relieve the pain. On the other hand, European sailors need to be very

Provisions.	Hints to Traders.	Cautions.	Currency.	Alum.
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careful about exposing themselves to the sun in summer, the heat being more hurtful than even in the tropics; cases have been known where the heat has struck a man down to the ground and death ensued in a few minutes.

Ships are supplied with provisions alongside, and what is worse too with spirits. About 25 lbs. of beef, 12 lbs. of mutton, 28 lbs. of bread, 18 lbs. of biscuit, or 12 lbs. of poultry, can be procured for a dollar. Laborers on board ship receive three mace per day each, and a boat to wait on a ship can be had for \$5 a month.

In conducting business, it must be borne in mind that weights and measures differ somewhat in every part of China. Mistakes often take place in consequence, and merchants having commercial dealings at the ports open to foreigners, whether in buying or selling goods by weight or measure, or paying or receiving money by weight, should make inquiries and learn the differences, and if practicable reduce everything to custom-house standard. The Ningpo merchants are not men of established character, or of very great means, and care should therefore be taken when goods have been sold to deliver them as per muster, and in good order and condition before witnesses, lest the market falling, the purchaser should damage them and say that he received them in that state, as a pretext to throw up his bargain; and in buying goods, every package should be examined before being removed from the seller's premises in order to guard against false packing and other frauds, which are common in this part of the country. Merchants should get a purchase note (vulgarly called a *hong-chop*), without which document, in the event of fraud or failure, the sufferer would find difficulty to establish his claim in a Chinese court of law.

The officials at the custom-house are stricter than formerly, but obliging and kind in their intercourse, giving the port-clearance without unnecessary delay; ships are allowed to drop down to Chin-hai without the grand chop. Sycee is preferred by the collector of customs, but he refuses no kind of coin at the current rate. The common currency is slightly chopped Spanish dollars, but the standard is the unchopped Carolus dollar, which fluctuates from 1600 to 1800 cash, and even 2000 at times; the Ferdinand chopped dollar is about $4\frac{1}{2}$ mace of copper cash discount, and the Mexican dollar about $5\frac{1}{2}$ mace discount.

One of the principal exports from Ningpo is alum, most of which goes to India. It is obtained in Ping-yang hien in Wan-chau fū, from the Sung-yáng hills near the borders of Fuhkien, and not far from Peh-kwan (Pihquan) Harbor. The locality was visited in Dec. 1855, by a foreigner who started from Chih-ki in Lannai Harbor, a little north of Peh-kwan; he gives the following particulars:—

Three hours' hard walking over a succession of precipitous hills, crossed by stone steps and pathways brought him to the mines. Ten alum-making establishments were in operation, which, with the exception of one on a hill opposite, occupied about a mile of the side of a lofty hill. The works were adjacent to the quarries from which the alum-stone seemed to crop out of decomposed rock of the same lithological cha-

Preparation of Alum. Reexportation of Produce. Residences at Ningpo.

racter. The stones were thrown into a fire of brushwood where they burnt with a slight lambent flame, and as they cracked, the fragments were raked out broken into small pieces, and macerated in vats. Subsequently the disintegrated mineral was thrown with water into a vessel, having an iron bottom and sides of wood, and boiled for a short time. The lixivium was then poured into large reservoirs where it crystallized into a solid mass. Blocks of alum weighing about 50 catties each were hewn out of the reservoir and carried in this state in bamboo frames, one on each end of a porter's pole to the place of shipment, where it is broken into fragments. When not designed for immediate exportation the blocks are stored away for drying. On reaching the depot the alum is found charged with a double quantity of moisture, for the porters being obliged to deliver a certain weight, slip their burdens in the mountain streams which they pass in the journey. Judging from the number of laborers engaged in transporting the mineral on the day of our informant's visit, the quantity brought from the works could not be less than eighteen tons. This was represented as less than an average day's work, as labor was in such demand just then for agricultural purposes that double pay was given;—and aged men and women, with boys and girls, were pressed into the service. Assuming that day's product as a basis for calculation, and making an allowance for rainy days, we may safely estimate the annual supply as between five and six thousand tons; and the quantity consumed by the dyers of Ningpo prefecture alone being nearly 22 tons per annum corroborates this estimate. The supply is literally inexhaustible. Five dollars and a quarter per ton at the landing would afford the manufacturer a fair profit. It often fetches much more, as there has been an increasing demand for the article owing to the greater facilities afforded for exportation from Ningpo in foreign vessels. The Wan-chau alum is equal to the best Roman; a roseate tint in some specimens indicates the presence of minute quantities of iron. We have no means of ascertaining the precise geological position of the rock from which this alum is procured; some circumstances seem to indicate it to be a new mineral. It is stated that no potash nor any other material is employed in the works. Granitic and porphyritic rocks abound in the vicinity, and some parts of the district produce iron and silver."—*N. C. Herald.*

Alum is also used by Chinese masons as a cement, being melted and poured into the interstices of their stone-work, and of course in damp situations ere long loses its adhesiveness, and the walls crumble. Carved and inlaid ivory furniture, and enameled silver work, are common articles of export from Ningpo. The trade in rice and sugar has greatly increased at this port during the last two years, but is still carried on under some disabilities, as most of it is coastwise, and not regarded as strictly a foreign traffic.

The reexportation of native goods from one port in China to another has been a point on which the authorities and foreign consuls have had much discussion. In 1854, Mr. Parkes, the British consul at Amoy, made an arrangement by which Chinese subjects were permitted to freight foreign vessels between Amoy and Ningpo on payment of the same duties which the merchandize would have paid in native vessels, payable at the time of shipment and discharge, and altogether not more than 2½ per cent. at valorem. There has been a disposition at Ningpo, however, to retreat from this arrangement in respect to native produce transhipped at Shanghai into the small craft plying to that city. The inspectors of customs there require the previous payment of the native duties into their own treasury, and then issue a certificate declaring such goods to be exempt from further duty at Ningpo, which certificate the collector of customs at the latter city receives with great difficulty.

Most of the foreigners live outside of the city walls and across the northern branch of the river, where they have built residences and warehouses. Excursions are taken into the surrounding country at

Treatment of Natives. Shanghai. Increasing importance of the Port.

pleasure, and sometimes parties remain abroad for days. It is needful to caution persons going among the people anywhere in China not to offer wanton disrespect to the temples or idols of the people, nor to desecrate or injure tombs, nor to force their way into houses; in short, not only to do no positive injury to the people, but to guard against doing anything to shock their prejudices. Many foreigners act as if they thought the Chinese had no more rights than slaves, and looking upon them as ready to cheat in trade whenever they can, take the badness of the native character as the excuse for their own misdeeds.

Section 9.

PORT OF SHANGHAI.

THE great increase of the trade at this port since it was opened in 1843 has shown conclusively that its position at the mouth of the Yangtsz' ki'ng will gradually attract to its markets most of the traffic with the centre of China; and the more that vast region is investigated, and its products examined with regard to their adaptedness to foreign consumption, by which at the same time the inducements will be increased to the people to buy foreign goods, so much the more will Shanghai increase in importance as a mart. The occupation of the city by armed insurgents from Sept. 8th, 1853, to Feb. 17th, 1855, and the consequent action of the foreign community to defend themselves from insult and attack by the institution of a separate municipality, has done much to give the foreigners residing at the port a commanding influence in the eyes of the Chinese. The city is now rapidly recovering from its disasters, and will soon have a greater population than ever.

The establishment of the foreign Inspectorate of Customs grew out of these evils, and has opened the way for foreigners to be officially employed by the Chinese government; and through the influence of the Consuls and Inspectors, more has already been done for improving and facilitating the navigation of the river up to Shanghai than at all other ports on the coast. Since Sects. 13 and 14 (pp. 106-111) were printed, the whole ground has been carefully examined, and a light-ship and buoys anchored, under the supervision of Lieut. Geo. H. Preble, U. S. N., who has also revised the old sailing directions, and issued them in a new form, which is here inserted as a substitute for those two sections.

Sailing Directions for the Navigation of the Yang-tsze Kiang to Wusung and Shanghai.

Vessels bound to Shanghai from the West Coast of America or the Pacific, and all who are unacquainted with the navigation of the Chinese coast, are recommended in the northerly monsoon to make the Saddle group of islands, as being the most weatherly land-fall.

Islands near the Saddle Is. Barren Is. Lighthouse should be on Gutzlaff I.

During the southwest monsoon, for the same reason they are advised to steer for the high dome-shaped island of "Video," called by the Chinese "Wong-shing-shan," which is the highest island to the southward, and in a clear day can be seen fifty or sixty miles. This island has a bold precipitous appearance, and is nearly square. It has also a remarkable white cliff, which near to shows distinctly when the island bears NW. by N. The summit of Video is in latitude $30^{\circ} 8' N.$, longitude $122^{\circ} 46'$ East of Greenwich.

N. $74^{\circ} E.$ from Video, and five miles distant, are seven rocks called the "Four Sisters;" and N. $78^{\circ} E.$ nine miles, are two rocks called the "Brothers." Between these rocks and Video, and between the two groups of rocks themselves, there are safe passages, the depths varying from thirty to forty fathoms.

N. $24^{\circ} E.$, and $19\frac{1}{2}$ miles from Video, is *Leuconna*, which appears when seen from the South at that distance three abrupt and round-top hummocks.

N. $17^{\circ} W.$ $14\frac{1}{2}$ miles from Video is the "Beehive Rock," 35 feet high, with a rock awash three cables to the Eastward of it, otherwise the depth of water around it is from 14 to 17 fathoms.

Between *Leuconna* and the East Saddle, is "Childers Rock," which is a rock awash, and which does not always show. When on it, the peak of E. Saddle bears N. $9^{\circ} W.$, the Barren Islands N. $70^{\circ} E.$, and *Leuconna* S. $15^{\circ} E.$ The lead gives no warning of it, the depth being 24 fathoms close to. This is the only hidden danger in the passage up to and beyond the Saddles. It is therefore needless to mention the appearance of any of the other land beyond and to the Westward, the charts being a sufficient guide.

The Saddle Islands form the Northern boundary of the Chusan Archipelago, and comprise a group of five large islands called the "North," "South," "East," "False," and "Side," Saddle, with numerous smaller islets and rocks included between the latitudes of $30^{\circ} 40'$ and $30^{\circ} 50' N.$, and longitudes $122^{\circ} 35'$ and $122^{\circ} 49' E.$ The two largest of the group are saddle-shaped, about 800 feet high, and of similar appearance when seen from the Eastward. The Northernmost point of the North Saddle Island is in Latitude $30^{\circ} 50' N.$, and its Easternmost point in Longitude $122^{\circ} 42' E.$

East by South from the North Saddle, and to the Eastward of the East Saddle, in Latitude $30^{\circ} 43' N.$, Long. $123^{\circ} 05' E.$, are the Barren Islands, which are three rocks about fifty feet high, nearly East and West from each other. To the Southeastward of the eastern rock is a rock awash, distant from it about two cables. In some of the former directions, navigators have been recommended to make these islands, probably as a caution in coming from the Eastward, as they are the most eastern rocks on the Chinese coast belonging to China.

Leaving the Saddle Islands, keep the North Saddle bearing about SE. by E., and bring Gutzlaff Island to bear South fifteen or sixteen miles distance, when the Amherst Rocks, if in sight, will bear NE. $\frac{1}{2}$ E. twelve miles. From this position, in a very clear day, Sha-wei-shan to the north, the Amherst Rocks, the Saddle Is., and several of the Barren and Rugged groups, as well as Gutzlaff, can be seen; such a clear atmosphere does not often occur, however, though both the Saddles and Gutzlaff are often in sight at once.

Gutzlaff Island is 210 feet high, and in a clear day can be seen twenty-seven miles. It appears a small round lump, and has a small rock or islet off its N. Eastern point. It is to be hoped that at no very distant day a light-house will be established on this island, which, standing as it does in the gateway to the Yang-tze Kiang, affords the best possible position for one. The Light should be a first class light, of the flashing or revolving kind, which can be seen thirty miles or more. As the island is more than high enough, a tower of sufficient size to contain the lighting apparatus and keeper's dwelling, would be inconsiderable. The yearly expense for keeping would be much less than what is required for keeping up the Light-ship, for which a *beacon* of some kind might then be substituted.

The Amherst Rocks are a small cluster of ragged rocks, of which one is larger than the rest, and elevated twenty feet above low water. Including the sur-

<i>Amherst and Ariadne Rocks.</i>	<i>Sha-wei-shan.</i>	<i>Light-ship.</i>	<i>Beacon.</i>
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rounding reef they occupy an area of half-a-mile in extent, and mark the Easternmost extent of the North banks. In the old sailing directions it was recommended to make them, but it is now considered best, for reasons which are obvious, to make Gutzlaff I. as above. It may be well here to remark, that no vessel should attempt to pass up the river without first sighting Gutzlaff or the Light-vessel. The Amherst Rocks are in Latitude $31^{\circ} 09' 03''$ N., Long. $122^{\circ} 23' 06''$ E., and bear from the North Saddle N. 42° E., distant 24 miles.

W. 14° S from the Amherst Rocks are the Ariadne Rocks, on which several vessels have struck. These are all under water, and seldom seen, and therefore to be avoided. In heavy weather the sea is said to break upon them, but several of the most experienced pilots say they have never seen them.

North of the Ariadne Rocks, sixteen miles, and about N. by W. from the Amhersts, is the island of "Sha-wei-shan," about the size or a little larger than Gutzlaff, and one hundred and ninety-six feet high. It is not often seen when a ship is in the right position for approaching the North bank. Vessels approaching the river are therefore cautioned, that when it shows plainer than Gutzlaff (which is the same height), that they are too far to the Northward, and in danger of entering the *False Channel* to the northward of the North Bank.

After bringing Gutzlaff I. on the before-mentioned distance and bearing, if a clear day, the Light-ship under the North Bank will be seen, when steer for her to cross the outer Bar. If the day is not clear, steer Northwest until she is seen, when steer for her as before directed and pass her at any convenient distance, leaving her on your starboard hand. If working in be careful not to bring the Light-ship to bear to the Westward of W. by N. if in a ship of large draught, or to the Southward of West if in a small vessel, as the bank shoals suddenly from four or five fathoms to two, according to position, and the Ariadne Rocks bear E. 11° S. from the Light-ship, 13 miles distant.

Using this caution, you may when up with, pass the Light-ship close to, as most convenient, though strangers are *not* recommended to go inside of her. Thence steer W.N.W. until you sight the Beacon erected on the South shore at the "Three Trees." When the South shore Beacon, or the "Three Trees," bears about W.S.W., your ship will be in six fathoms at low water, and the South shore will be plain in sight.

Continue now a N.W. by W. course, and pass the South Shore Beacon at two or more miles distance, when you will in all probability see the dry North Bank on your starboard hand, which is only covered at the highest spring tides. You will soon rise "Block House Island," which at first has the appearance of a cluster of fishing-boats, gradually showing itself a low island covered with bushy trees. When the large House on this island bears N.E. by E., you are in the narrowest part of the channel, which at that point is only one mile and a quarter wide. After passing Block House on the starboard hand, you should gradually close with the South shore to about a mile, and keep it at that distance until the marks and buoys for Wusung spit are seen. As the South shore bank is steep to, that shore should not be approached nearer than three-quarters of a mile. The second clump of large bushy trees on the low point open half a point of the square and well-defined outer point of Panshan, will clear you of the Wusung South spit, if the buoy should at any time be removed.

The foregoing directions apply to vessels of a heavy draught, say eighteen feet; small craft may use much more freedom, closing with the South Bank when Gutzlaff is 12 or 15 miles to the Southward, and working up with the lead for a guide. The Southern shore is *not* to be depended on all the way, however, for the Bank is very steep after passing the Beacon, and should not be approached under three-quarters of a mile.

After passing Wusung marks, keep the Western shore well on board until after passing Wusung village, and up to the first point on the Eastern side, or until you open the second creek on the Eastern shore, which will be about a mile above the village, then cross over and keep the Eastern shore close on board until up to the head of this reach, where a fleet of junks is usually moored opposite a village, which course will also take you over the Bar above Wusung,

<i>Wusung Village.</i>	<i>River Channel.</i>	<i>Two Bars.</i>	<i>Tides.</i>	<i>High Water.</i>
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the channel over which Bar in some places is scarcely a cable wide. Through the next reach the course is nearly south, and deep in mid-channel; when up with Half-way Point, close with the Eastern Bank again, and keep it close on board until the foreign settlement of Shanghai is in sight, when cross over and keep nearest to the right or Western shore.

The depth of water on the outer Bar at the lowest spring tides is twenty-one feet, and on the bar *above* Wusung it is about twelve feet. The greatest draught of water ever brought up to Shanghai, has been between twenty-one and twenty-two feet, and a ship drawing that much water will have to wait for the spring tides to pass up or down the Wusung river.

In working up after passing the Light-ship, you should not in standing towards the North Bank bring her to bear to the Southward of S.E. by E. $\frac{1}{4}$ E.; and on the South Bank side should go about when in $3\frac{1}{4}$ fathoms of water.

The deepest water is near and along the South edge of the North Bank. Generally the inner edge of the North Bank is lined with heavy fishing stakes close to, which are planted in four and five fathoms of water. A ship's length inside of them there is but a *few feet* of water.

It will be generally safe for a vessel to anchor off the entrance of the river, outside of Gutzlaff I. in four, five, or six fathoms water; and I would not recommend an anchorage being sought under the Islands at night *unless there are appearances of bad weather*, as it will frequently take all the daylight of the next day to work up from the Islands.

In the summer time, if bad weather is approaching, which the barometer will usually foretell, an anchorage should be sought under the Islands, or the vessel kept to sea, as it is dangerous to enter the river when a gale is coming on, without a prospect of getting in. It is, I think, preferable to anchor rather than stand to sea, as the weather is sometimes thick or foggy; the tides are strong and uncertain, and the ship's position may be lost.

All the compass courses given in these directions are to be varied according to the stages and strength of the tides. The use of a ground log for both course and distance is therefore recommended, the ship's course being materially affected both by the strength and set of the tide.

It is high water at the full and change of the moon in the neighborhood and to the Eastward of Gutzlaff, between 11 and 12 o'clock. In the river off Wusung, high water occurs at the full and change about 1 hour 30 minutes. The rise is uncertain, but ranges from one fathom to fifteen feet. Its velocity is from $1\frac{1}{4}$ to $4\frac{1}{2}$ knots, but it is affected both in velocity and direction by the prevailing wind.

From the Saddle Islands to Wusung the tide generally sets NW. by W., and SE. by E. when fully made, if no such cause as NE. gales or heavy rains interfere. The *flood* makes first to the Southward, then SW., and gradually round to NW. at half-flood, which is its direction at the strength of the tide. The first of the *ebb* sets to the Northward over the North Bank, and in like manner changes round to the Eastward, gradually running the strongest when SE.

It is at the turn of both tides that most caution is necessary to avoid being set out of the channel. Round the SE. edges of the South Bank the flood sets W.S.W., and the ebb the contrary way. Leaving the position off Gutzlaff at a quarter ebb, a vessel will carry the flood to Wusung if there is any wind.

Competent foreign pilots (English and American) will be found cruising in the neighborhood of the Saddle Islands during the summer months, and at the entrance of the river outside of Gutzlaff in the winter. No sailing directions can do away with their usefulness to the stranger, where the safety of the ship depends so much upon a correct knowledge of the tides. The signal of the authorized pilots is a flag half red and white horizontal, with the number of the boat in black.

The marks to guide vessels coming into the river, and referred to in these directions, which were prepared by Lieut. Preble, are des-

Guides into the River. Light Vessel. Beacon. Buoys. Poles on North Bank.

cribed by him in a letter to the American Consul at Shanghai, dated July, 1855, from which the following is an extract:—

FIRST.—A Light vessel of one hundred and thirty-one tons burthen has been moored with heavy chains and anchor in four fathoms of water at low water spring tides, near the Southwestern extremity of the Southeastern part of the North Tung-sha Banks. This vessel is placed in latitude by observation $31^{\circ} 09' 15''$ N, Longitude by the mean of several observations by the three chronometers of the U. S. S. *Macedonian*, $121^{\circ} 59'$ E.: and bears by compass from the centre of Gutzlaff N.N.W., from which she is distant 25 miles. This position places her on the inner edge of the outer bar marked on Collinson's Chart of the river, and well up towards the North bank. In working in, she should never be brought to the Westward of W by N. in a ship of heavy draught, or to the Southward of West with a smaller vessel. The Light ship will be readily distinguished from ordinary cruising vessels, by having her two lower masts and topmasts only aloft, and from her hull and masts being painted a bright red, also from having inverted cones of basket work six feet in diameter placed over each of her topmast heads. For the present at night she will hoist an ordinary ship's light until a better one can be provided. She is furnished with a set of Marryat's signals in order to communicate when requisite with vessels in the offing. She has on board a European captain and Chinese crew to attend her, and it is hoped will prove a rendezvous for the European pilots; whence they can board in-bound vessels. It is proposed that when from her a stranger is observed to be running into any danger, she first fires a gun to attract his attention, and then hoists Marryat's signal in Part V. No. 1680,—“Vessel is running into danger,” followed by the compass signal of the course to be steered to avoid it.

SECOND.—Contracts have been entered into for building a Beacon tower of masonry to be twenty feet square at its base, and fifty feet high, and tapering off to ten feet square at that altitude, and to be surmounted by a mast or spar of fifty additional feet—thus making its whole height one hundred feet. This Beacon will be erected on the South shore, near what is known to pilots and others as the “Three Trees.” When completed, the Beacon is to be white-washed, and the mast painted black to afford the most distinguishable contrasts, and will be seen in an ordinarily clear day before losing sight of the hull of the Light ship.

THIRD.—A large nun buoy painted red has been placed upon the Southeastern extremity of the Wusung North spit in three fathoms' water at lowest spring tides.

FOURTH.—A Large nun buoy painted black has been placed upon the Northeastern extremity of the Wusung South spit in three-and-a-half fathoms water at lowest spring tides.

FIFTH.—The three poles on the inner angle of the stone fortification on the right or Northernmost bank at Wusung, used as leading marks for the entrance of Wusung river, are to be replaced by three new ones each sixty feet high. The two rear ones are to have crow's-nests built around them, and will be painted red. The pole in front will be shorter than the other two, and have on its top a bull's eye or target, and will be painted white. The white pole between the two red poles is the leading mark for entering the Wusung river.

In addition to these marks, eight iron buoys are to be placed alternately along the inner edge of the North Bank, and upon the northernmost points of the South Bank; and others are to be placed to mark the middle ground in the Wusung River.

In addition to the complete directions given by Lieut. Preble, the following general remarks concerning the navigation of the Chinese coast in both monsoons, will form a valuable appendix to the surveys already given, as they are the results of many years' experience.

*Vessels should keep in shore.**Current and Rocks in Bushee Channel.***The Passage from Hongkong to Shanghai.***By George A. Potter, of the American ship "Architect."*

Vessels departing from Hongkong bound for Shanghai, in the northeast monsoon, should be in good condition for contending with rough weather and for carrying sail. Upon leaving, either the Ly-u-moon, or the Lamna passage can be taken, the latter being preferable for a large vessel. When clear of the islands the wind will be found to be E.N.E. generally, or as the line of the coast trends, and when the monsoon is not heavy, periodical changes of wind occur: at such times vessels should be close in with the land early in the morning, and tack off shore at about 8 A.M., standing off till about 2 P.M.; and on the inshore tack standing boldly into the coast, making such arrangements during the night as will bring the vessel in a position inshore again in the morning. When the monsoon is moderate, vessels should not stand far into the bays, as they will by so doing, experience light winds and oftentimes calms; and on the contrary when the monsoon is strong, they should stand in as far as possible into the bays, and then not stand farther off than is actually necessary, especially as the changes of wind above alluded to seldom occur at such times; it must also be borne in mind that vessels almost always go faster in-shore, than they do off, as there is a ground swell heaving after them when in with the land. During the severe monsoon gales, which last about three days, vessels should seek shelter in one of the numerous good anchorages to the Westward of Breaker Point, when, upon the breaking up of the gale, they can make a fresh start, and perhaps get around Formosa before encountering another, especially after the month of November. Having reached Breaker Point, stretch over for the south end of Formosa, and upon getting to the Eastward, the wind will be found to veer northerly, or more as the coast of Formosa trends, and a good sailing vessel will be almost sure to fetch the South Cape or Lambay Island to windward. Upon getting in with the land, light variable winds or calms are often met; but the strong SW. current will very soon drift the vessel down, when she will find the breeze coming on fresh again. In passing the South Cape in the daytime keep close into the land, and the nearer the shore the stronger the favorable current, there being no hidden dangers. In going round in the night, however, and when there is no moon, it will be advisable to pass to the southward of the Vela Rete Rocks, and tacking to the N.W. when nearly in the longitude of Gadd's Reef, or sooner if it is daylight, as the South Cape of Formosa is very low, and rather unsafe to approach on a dark night; and again when a gale comes on and a vessel is obliged to heave too, being to the Westward of the Cape, and near it, a strict lookout should be kept during the night, as several vessels under these circumstances, have found themselves to the eastward of the Cape in the morning, having been drifted to windward during the night and passed probably within a dangerous proximity of the Vela Rete Rocks. The current sets sometimes with incredible velocity around the Cape, and then up northward along the coast, and the harder the gale the more rapid the current, gradually diminishing in strength towards the north end of Formosa. After rounding the Cape vessels should work short tacks along the east coast of Formosa, keeping close inshore to get the benefit of the current.

Having reached the northeast cape of Formosa, (the wind not having veered to the Eastward, as may sometimes be the case), keep between the meridians of the Barren Islands and the islands off the northeast of Formosa, not stretching in for the coast of China until able to make a lead in for Video or Leuconæ. Thence to Shanghai follow the sailing directions given by Lieut. Preble U. S. N. in his survey of the mouth of the Wusung River.

Regarding the trip to or from Shanghai in a fair monsoon, little can be said; coasting vessels, when without observations are in the habit of sighting the land to verify their reckoning. In the N.E. monsoon there is a constant current down the coast running with more or less velocity according to the strength of the wind, and the wind generally blows along the line of coast, i. e. E.N.E. from

Tyfoons and Currents on Coast. Barometer useful. Pilot Regulations.

Hongkong to Breaker Point; NE. in the Formosa Channel; and N.N.E. from Formosa northwards. The first part of the monsoon is very strong; and frequently in the month of October, it is almost an incessant gale, at a later stage from January to May S.E. winds are not uncommon, and they become more frequent as the season advances; there is also considerable thick weather in the latter part of the monsoon; and a S.E. wind to the northward of Formosa almost invariably brings a dense fog with it.

The passage from Shanghai to Hongkong in the S.W. monsoon is very tedious from the frequent alternate calms and squalls, with a constant strong current up; coasting vessels generally use their kedge when there is not sufficient wind to make any progress. In working down it is well to keep in with the coast, stretching into bays and by headlands, to get out of the current, if there is sufficient wind to preclude the possibility of getting becalmed.

The tyfoon season is considered to extend from July to October; during this period of the year a barometer cannot be watched too closely. Tyfoons have happened in May and June, though this is seldom the case. These storms appear to originate to the Eastward in the Pacific Ocean, and passing the Bashee Islands, traveling to the Southward of West, their centres pass nearly over the parallels of Hongkong and Macao; a falling barometer with a northerly wind is almost a sure sign of the approach of a cyclone in this vicinity. In coming from the Eastward they sometimes turn off their usual course, which is perhaps caused by the high land of Formosa intervening between the place of their origin and the coast of China and at such times they travel North, curving again to the Westward. This inference somewhat accounts for the fact that Amoy is seldom visited by these storms, and they are never felt there with such a degree of severity as at the other ports to the north and south of Formosa. The cyclones are generally preceded by a heavy swell from N.E. to E.

Pilot Regulations for the Port of Shanghai,

Issued Dec. 10th, 1855, by Chau, the Tautai and Collector of Customs.

1st.—A Board shall be appointed by the three Consuls, sanctioned by His Excellency Chau, consisting of not less than three, nor more than five, shipmasters, with whom a Naval officer shall be associated if required, before whom all persons wishing to become pilots shall appear for examination.

2d.—A certificate of competency from a majority of said Board being deposited at his Consulate, shall entitle the person therein named to a license as a pilot. In all cases where the nationality of the applicant is other than one of those nations in treaty with China, his certificate from the Board of Examiners must be deposited with the senior Consul, who will obtain for him the necessary license.

3d.—Every pilot-boat is to hoist a red and white flag horizontal, on which the number of his boat shall appear in black.

4th.—The rates of pilotage shall be by the water the ship draws, viz., from Gutzlaff, \$5.00 per foot; from Beacon-ship, \$4.00 per foot; from any point outside Wusung, but inside Beacon ship, \$3.50 per foot; from Wusung to Shanghai, \$3.00 per foot. The same rates of pilotage are allowed for vessels outward bound.

5th.—Every pilot on boarding a ship shall produce for the inspection of the master his license as a pilot.

6th.—All persons acting as pilots without a license as hereinbefore prescribed, shall have no claim for services rendered, and be dealt with by their own Consuls according to law, for violating these regulations: and all such cases not coming within the jurisdiction of the Treaty Consuls, are to be referred to the local Chinese authorities.

7th.—Pilots shall be responsible for the faithful and complete discharge of their duty; and any misconduct, either from ignorance, incompetency, willful

<i>Municipal government of Foreigners.</i>	<i>Inspectors of Customs.</i>	<i>Táutai.</i>
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neglect, or otherwise, being proven, shall entail a forfeiture of the offender's license, in addition to any other liability he may have incurred by the laws of his own country.

On reaching the foreign settlement, which lies on the northeast side of the city, and along the west bank of the Wusung river, the ship anchors opposite the residences of the merchants. These are situated between two creeks called the Súchau and the Yangking-pang, on a parcel of ground which was set apart for foreigners; it comprises about eight square miles, and is rapidly filling up with substantial buildings. The mercantile establishments lie in a compact settlement, each one having godowns, and other outhouses within its own inclosure. The government of this settlement is a municipality, founded on a body of regulations drawn up by the residents themselves, assisted and sanctioned by the English, French, and American consuls, who have undertaken to see them enforced over all persons living within the limits, the natives being examined, and when guilty handed over to the Chinese authorities. There have been some doubts expressed as to the power to make and execute these laws in this manner, and the system rests rather on the necessity felt for some well understood plan of action, and the unanimity and public spirit of the community for carrying it out, than on a legal foundation. The public affairs are administered by a Committee of three or more, annually elected at a general meeting of rent payers, to whom it makes a report. The necessary funds for making and repairing streets, roads and jetties, lighting streets, and maintaining a police, are raised by direct taxes on land and houses, and by a wharfage rate levied on all goods landed or shipped; they amount now to about \$10,000 a year.

Owing to the entire suspension of the power of the officers of the Chinese government, when the insurgents captured the city in 1853, and the consequent confusion in the customs, it was agreed between the Táutai and foreign Consuls to establish a foreign Inspectorate of Customs composed of three persons, one appointed by each of the consuls of the three Treaty powers, whose duty it should be to have a general superintendence of the foreign customs of the port, and form regulations for making the service effective, all to be done with the consent and under the supervision of the Chinese authorities. This system went into operation July 12th, 1854, but has not hitherto received the express sanction of the Board of Revenue and Court at Peking.

The highest officer at Shanghai is the *táutai* 道臺 or intendant of circuit, whose authority extends over the three prefectures of Súchau, Sungkiang and Taitsing, all lying in the northeast of the province of Kiángs; this officer is subordinate to the governor at Súchau, and has come to reside at Shanghai since it was opened to foreign commerce. His salary is legally 4000 taels per annum, but the perquisites of the post are estimated at 365,000 taels, out of which he pays his subordinates and official expenses. The office is

Corps of Inspectors. Regulations for ships, loading, transshipping, &c.

reckoned to be worth from 25,000 to 30,000 taels a year to the incumbent. Besides the *táutái*, the *chihien*, or district magistrate of Shanghai, resides in the city, with other local district officials; but except the *chihien* himself, they have nothing to do with foreigners.

The Inspectorate is now composed of the following persons:—

	Salary
Three foreign Inspectors,.....	\$6000 per annum.
Bookkeeper and Secretary,.....	2500 " "
Three linguists,.....	75 per month.
Seven writing clerks,.....	5 "
One head watchman,.....	5 "
Twelve watchers,.....	7 "
Six coolies,.....	4 "
Captain of the revenue cutter,.....	300 "
Thirteen men for crew,.....	5 "
One howder,.....	12 "
Ten boatmen watchers,.....	162.50 "

Total outlay, \$29,362.00 per annum.

The Inspectors, with the advice and coöperation of the *Táutái*, have published a series of regulations for vessels and shippers of goods, which went into effect July 12th, 1854. Since their publication, some others have been announced, one or two of which intimate that the duty on some articles has been diminished.

Foreign Shipping.

1. **THE PORT.**—The limits of the port are defined by the Port Regulations dated 26th November, 1846, to be—"Within the lines formed by Paushan Point, bearing West, and the Battery on the right bank at the mouth of the river below Wusung, bearing Southwest." All vessels landing or receiving cargo from shore outside the boundary line, are by treaty liable to confiscation, with their cargo.

2. **REPORT ON ARRIVAL.**—Masters of vessels casting anchor within the port should by treaty report themselves to their Consul, and deposit their ship's papers and manifests with him within 48 hours. For failing to do this, for exhibiting a false manifest, or for discharging cargo without permit, either before entry or after clearance, they are liable under treaty, to fine.

3. **ENTRY.**—No vessel can be entered until the Customs receive a copy of her manifest, and other necessary information from the Consul of her nation; or, if there be none present at the port, from the Consul of some other nation.

4. **MANIFEST.**—The master is responsible for the correctness of the manifest, which should contain a full account of the goods and cargo on board. Should there be any packages, of the nature or contents of which the master is uninformed, these must be stated in the manifest. If the master or consignee become aware of the incorrectness of the manifest, no time must be lost in applying to amend it.

5. **DISCHARGING.**—As soon as a vessel is entered, the Customs issue to her consignee, on his application, a *general permit to open hatches*, which should be handed to the master: but the master must allow no cargo to leave the ship without a *special permit to consignee*, on which the consignment is described, and he must be careful to attend to the printed directions on the face of that permit.

6. **LOADING.**—When the whole of the cargo is discharged, the master will obtain, through his consignee, from the Customs a *general permit to load*, but he must admit no cargo without a *special permit to shipper*.

<i>Permits granted.</i>	<i>Lighters.</i>	<i>Exclusion of Cargo.</i>	<i>Duties.</i>
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7. **TRANSHIPPING.**—No transhipment can be made from one vessel to another, without *special permit*. N. B.—The master must be careful neither to discharge any cargo into, nor receive any from, an unregistered cargo-boat, unless the permit contain a *special permission to native or other boats*. This is never refused where there are reasonable grounds of application.

8. **HOURS.**—All shipment, landing, and transhipment, must be effected between sunrise and sunset, on all days, Sundays excepted.

9. **CLEARANCE.**—A vessel cannot receive her Customs' clearance, commonly known as her Grand Chop, until her loading is completed. Her permits are then collected on board by the captain of the revenue cutter, who hands them in to the Customs. Her Grand Chop is then issued, and on production of this at the Consulate, her master receives back her papers. N. B.—Masters of vessels clearing for a Chinese port should be careful to apply also for the *Grand Chop in Chinese*.

Shippers and Consignees.

1. All applications whatever regarding Customs' business should be addressed to the Inspectors of maritime customs. Much delay will be saved by attention to this rule. The Custom-house is open for the receipt and issue of all necessary papers from 10 A.M. to 4 P.M. on all days, Sundays and holidays excepted. Cargo may be shipped or landed, under permit, from sunrise to sunset.

2. **PERMIT TO OPEN HATCHES.**—Is a general permit issued on application of the vessel's consignees, as soon as she has been entered by the Consul, and her manifest has been received either from the Consul or the consignees.

3. **PERMIT TO CONSIGNEE.**—Is a special permit issued to each consignee, to enable him to land his consignment. The applicant must state the number of packages, with their marks, the nature of their contents, their weight, value, quantity, or dimensions, as the case may be.

4. **PERMIT TO LOAD.**—Is a general permit applied for when the vessel is ready to take cargo. Until it is issued, no permit will be granted to shippers.

5. **PERMIT TO SHIPPER.**—Is a special permit applied for by every shipper. It must give full particulars of the intended shipment:—if of TEAS, the marks, aggregate total of packages, *viz.*, chests, half-chests, &c.; descriptions of Teas (Congou, Hyson, Twankay, &c.) and aggregate weight of each description; if of SILK, the marks, number of packages, description of silk goods, *viz.*, silk, coarse silk, silk piece goods, &c., with the aggregate weight of each description; if of other GOODS, the number of packages with their marks, weight, or value must be given, where the tariff duty is levyable according to either.

6. **ESTIMATED WEIGHT OR VALUE.**—If the applicant for permit be unable to give the *exact* weight or value of his goods, he is to give in *estimated* weight or value. This is presumed to be the nearest possible approximation to the actual weight or value, and he is expected to give notice of any amendment he may have to make, as soon as he is in possession of more accurate data.

7. **EXCLUSION OF CARGO.**—The earliest possible notice must be given of the exclusion of cargo for the shipment of which a permit has been granted. If it has left the shore, it should not be re-landed, until notice has been given to one of the Inspectors, or to their Secretary, or to the Captain of the revenue cutter, when a person will be sent to verify the report.

8. **CARGO-BOATS.**—Without special permission, which will always be given on reasonable grounds, no cargo can be shipped, transhipped, or landed, except in a registered cargo-boat, the person in charge of which must hand the shipper or consignee's permit to the master or mate. No cargo can be placed on board a cargo-boat, until permit to land or ship the said cargo has been issued by the Customs, and any cargo-boat receiving cargo without such permit is liable to be deprived of its register. The owner of any boat so offending, if a Chinese, is also liable to be otherwise punished. The number of registered cargo-boats is not limited.

Duty Receipts.	Brokers.	Storing of Produce.	Banks.
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9. PENALTIES.—Apart from the fines provided by treaty for particular offences, any breach of the Customs' regulations, respecting the shipment or discharge of goods, exposes such goods to seizure and confiscation.

10. PAYMENT OF DUTIES.—Consignees or shippers should apply as early as possible for a *Shou-tan* or Customs' memo. of the duties due by them. When the amount specified thereon has been paid into the Hai-kwan Bank, or receiving office, the *Haou-shan* or duty receipt obtained from the Bank is forwarded to the Inspectors. They return to the payer a printed receipt in English, which is handed to the consignee of the vessel, and by him transmitted to the Custom-house when he desires to clear her.

11. TONNAGE DUES.—Vessels bringing full cargoes of rice or grain into port pay no tonnage dues. Vessels are also exempt from these when, having paid them at any other of the five Ports, they come either in ballast, or to complete the disposal of their original cargo.

12. DUTY RECEIPTS.—The *Lien-tan* 驗單 or inland guaranty to pay duty on a stated quantity of produce, is not a duty receipt (*Haou-shan* 號收), nor is the quantity therein stated necessarily that on which duty will be levied. It may be more or less. Native merchants, tendering these *Lien-tan* to the foreign purchaser of produce, should be directed at once to exchange them at the Bank for the proper Bank certificate, viz: the *Hiang-tan* 餉單, which is equally valid with the *Haou-shan*. When a duty receipt is for a sum larger than the amount of duties due, the Hai-kwan Bank will exchange it for two receipts, one for the amount due, and the other for the balance. Application direct to the Bank will save some delay, both to the payer and to the Customs.

The trade of Shanghai is carried on more directly with the merchants who bring produce from the interior than it is at Canton, where the routine of the old co-hong still keeps these men at a distance from the foreigner; but as these country people cannot talk English, they come with brokers who interpret for them and conduct the bargain, or else apply to the foreigner through his own comprador, either of whom in that case receive a commission of 1 or 2 per cent. for their agency. These traders and brokers come from all the northern and eastern provinces, but the most active are the Canton men. The principal articles of exportation are tea and raw silk, in which the increase has been very rapid since 1846; the manufacture of several kinds of silk piece-goods is increasing, and will probably extend owing to the nearness to the producing districts, and the diminution of good workmen at Canton. The export of other articles is comparatively trifling.

—Produce is received in the warehouses of the foreigners, where it is weighed, examined, and prepared for shipment. Payment is not made until the goods have been carefully inspected, unless where they have come in from the country under contract. This is frequently done by foreign Houses for tea and silk, especially for raw silk; and some of them annually send native agents with funds into the interior to purchase tea and silk. The native capitalists come chiefly from Ningpo and Sûchau, and advance on these staples at the interest of 1 to 2 per cent. per month, according to the state of the money market; they also issue notes payable in ten days, which when from good bankers pass currently among foreigners and na-

Climate of Shanghai. Winds. Navigation of the Yangtsz' Kiang.

tives, and greatly facilitate exchanges. They charge the recipient \$1 per \$1000 for ten days, after which if not taken up, the interest is calculated from that day on.

The climate of Shanghai is more variable than Canton, but has proved generally healthy to the foreign community since they have erected good dwellings. The averages of the thermometer at the two places, with the prevailing winds and a notice of the seasons at Shanghai, are here given:—

	SHANGHAI.			CANTON.			<i>Prevailing winds at Shanghai.</i>
	<i>Day Maxi- mum.</i>	<i>Night Mini- mum.</i>	<i>Monthly Mean.</i>	<i>Day Maxi- mum.</i>	<i>Night Mini- mum.</i>	<i>Monthly Mean.</i>	
January, -	67	18	41	74	29	64	N.E. to N.N.W. & generally N.N.W.
February, -	65	19	42	78	38	57	N.E. to N.W. and generally N.W.
March, -	75	28	50	82	44	72	N.E. to S.E. and variable. [able.
April, -	79	33	59	86	56	77	E.N.E. to S.E. chiefly S.E. & vari.
May, -	87	37	69	88	61	78	E.S.E. to S.S.E.
June, -	99	58	75	90	74	85	S.E. to S.S.E.
July, -	100	64	85	94	79	88	S.S.E.
August, -	100	63	84½	90	75	85	S.S.E.
September, -	92	51	77½	88	70	83	N.E. to E.
October, -	90	37	67	85	57	77	N.E. to N.W.
November, -	80	25	56	80	40	67	N.W. and variable.
December, -	77	19	46	70	45	62	N. to N. W.

January is generally fine. In February thick fogs occur. March is damp and disagreeable. April has more rainy days than any other month except June, which is the wettest month. In May there is but little rain, and that little occurs in heavy showers. July is hot, dry, scorching with considerable rain in the form of evening thunder showers. July and August are the hottest months. In September the SW. monsoon is wholly broken up, and the temperature is very changeable. In November the winter fairly sets in, the first frost appearing from the 12th to the 20th. December is the driest month of the year, and the weather clear and freezing, though fogs are of occasional occurrence. Snow and ice remain but a few days at a time. In May, June, and July, fogs also occur. The mean height of the barometer from January to April is 30.25 inches; from May to September 29.83 inches; and from October to December, 30.34 inches.

In order to complete the series of sailing directions for ships on the Chinese coast, the following article has been taken from the London Marine Mercantile Magazine for 1854; with the charts of the Yangtsz' Kiang in his hand, these hints will greatly assist the navigator going up the river.

Remarks on the Passage up to Nanking,

By H. R. Elliott, Master of H. B. M. S. "Espeigle," March, 1848.

The Blonde Shoal, about ten miles from Pau-shan, is the first difficulty met with; to avoid which it is advisable to keep as near as possible, in a small vessel

Pl. Harvey. Single Tree. Great Bush. Pagoda. Foo-shan Crossing.

in your own draught of water, ($2\frac{1}{2}$ fathoms) on the Southern bank, as by hauling off and deepening to 3 fathoms we grounded on it. It was then low water, and there were only 2 feet on its shoalest part.

It appears to be composed of a bed of rocks, covered with mud; the banks of the river on both sides present such a sameness in appearance that there is no possibility of giving any leading marks for them. The bearings (while aground) of the extremes of the land, on the South bank, carefully taken with an azimuth compass, were from E. 49° S. to W. 42° N. The whole of Tsungming I. to Point Harvey is the same, low, flat, unremarkable land. When nearly abreast of the *broad opening* (5 or 6 miles to the Southward of Point Harvey), it showed plainly, and several small junks appeared passing through it.

On nearing Point Harvey, it is necessary to note that the Point itself is low and without trees on it; and to fix upon some particular object before abreast of it to mark the spot, to keep it in a proper bearing, (SE. by E.) in shaping a course to the westward. By not being prepared for the difficulty in making out the Point, a vessel will be liable to be set by the flood on the banks to the Northward, particularly if the weather is the least hazy.

Single Tree on the South bank, is a tree at this season apparently withered, and about half its height from the ground spreading into two branches, and having a forked appearance; but another tree, of a withered appearance, not so high, is to be seen close alongside it to the Eastward.

Great Bush is a cluster of tall trees, with thick foliage. Between Plover Point and Foo-shan, in the middle of the channel, we had shoal water ($3\frac{1}{4}$ fathoms), Lang-shan Pagoda bearing N. by E. $\frac{1}{4}$ E., and the second from the Eastward at Foo-shan, with some buildings on it, W. $\frac{1}{4}$ N. Running with a fair wind, we endeavored to deepen our water, first by hauling up to the Northward but shoaled to $2\frac{1}{2}$ fathoms; by keeping her directly across the channel to the Southward, we deepened to 8 or 9 fathoms. Lang-shan Pagoda will be easily known; it is on the summit of one of three hills, which when seen from the Southward and Eastward appear nearly as one. The whole of the surrounding country, as far as the eye can reach, is one unbroken flat.

At Foo-shan there are four very low remarkable hills, the Easternmost is the smallest and at a distance not easily made out. The second hill, the next close to it, is higher, and there are some houses on it. This hill together with Lang-shan Pagoda, are excellent marks for passing over to the north side of the river. This part of the river is called the Foo-shan Crossing. A difference between the depths found, and those on the chart, is to be expected, but having worked the vessel across, I consider, by close observation of the cross bearings, that the banks may be easily avoided.

On reaching the North bank, from thence westward, the navigation is rather precarious from the great breadth of the river (the South bank not being visible), the want of leading marks, and the channel being much contracted. In returning down this part of the river it happened to be dead low water, the banks on both sides being uncovered in many places to the height of from 5 to 9 feet; it was also uncovered in places where 2 and 3 fathoms are marked on the charts, and in one part where Kea-shan hill bore to the Southwestward of us, the channel was visibly contracted to less than three-quarters of a mile; when to the westward of Kea-shan, we frequently shoaled to $3\frac{1}{2}$ fathoms, and although we yawed from side to side close to the banks, we seldom deepened to more than 5 fathoms, until we got well to the eastward of Kea-shan. From the unfavorable state of the weather, being mostly thick, drizzly and raining, we were unable to make any observations, such as the opportunity would have offered had the weather been clear, and allowed us a view of distant objects. Inside the banks, on the North side of the channel, there appeared even at the low ebb of the tide, a channel used by some small junks, their hulls being nearly hidden by the uncovered banks between us. In coming up after leaving the Foo-shan Crossing, the right bank may be kept pretty close on board (as the chart indicated), but several fathoms less water than is marked will be found,

Kea-shan Hill. Starling I. Shaydon R. Choo-shan Pagoda. Jupiter Shoal.

When Kea-shan bears about W. S.W., I consider it best to increase the distance from the North bank, and gradually borrow towards the South side of the channel until you are to the westward of Kea-shan. We anchored near the North bank in 22 fathoms of water, Kea-shan bearing S.W. by W. $\frac{1}{2}$ W., Lang-shan Pagoda S.E. by E. $\frac{1}{2}$ E., and the East end of a low flat patch, to the Southward, S. $\frac{1}{2}$ W. Kea-shan will be easily known; it appears when first seen from the Eastward like a small round knob of land; all the land in its vicinity is very flat and low. Koo-shan is a small low hill, with some houses on it, not easily distinguished if the weather is at all hazy. All the hills marked on the chart on the South bank will be easily known as far as Kiang-yin-hien; the low one forming the point of the river, opposite the south point of Yin-shan, kept on a S.W. by W. $\frac{1}{4}$ W. bearing, though a distant, is a tolerably good mark for leading between the Cornwallis Shoal and the banks to the Northward; the west extreme of the range of hills on the South bank, which bears S. S.E. from Koo-shan, will serve as a good mark also; a cross bearing of Koo-shan will show when you are near, and when past it. The Cornwallis Shoal is the small bank on the South side of the channel, marked with $1\frac{1}{2}$ fathoms on each end of it, bearing from Koo-shan E. S.E. nearly; we saw it completely uncovered.

Proceeding up the river, the South end of Starling Island and Hwang-shan will become visible; by keeping the latter not quite on with the South end of Starling Island, but rather to the Southward of it, it will lead you right up to it, clear of the banks which project from the North side of the channel.

Starling Island is long, exceedingly low and flat, the Southern part is wooded and populated, but the Northern part is an extremely narrow low slip of land, that will, judging from appearances, in all probability be swept away the first time there is an unusual swelling of the river. The Northern extremity for about a mile has already disappeared, which I found by transit bearings both on going up and coming down, the present bearings of the North extremity of the island from Hwang-shan hill, being E. by N. $\frac{1}{2}$ N. (by chart it is N. E. by E.); and instead of there being 12 fathoms close to it, it is rather shoal, and should be given a berth at low water of at least half a cable; all the rest of the Island from its South Point upwards we found bold. When abreast of the eastern entrance to the Shaydon River it appears difficult to proceed; the chart showing a blank without any soundings, and instead of one small island only appearing on the right hand, there are three large ones visible, with houses and numbers of rush huts thickly studding the islands all over; they extend as far North as an E. N.E. bearing, from the North point of the Eastern entrance of the Shaydon River. On the chart deep water (13 fathoms) is marked near the North point of the Shaydon River, but we found only 4 or 5 fathoms, and deepened our water by hauling more towards the islands abovementioned. After passing this place, keep towards the right bank of the river, (taking the precaution not to come too near the Northward extremity of these Islands, in the event of any spit growing up in a Northern direction,) until Choo-shan Pagoda (which will soon be seen over the land and recognised) bears nearly West, when the left bank must be immediately crossed over to; you will then be to the Westward of the long shoal marked with $\frac{1}{4}$ fathom on it, but which was visible to us full 6 feet above the water a mile in extent. This shoal is called after the "Jupiter," which grounded on it. Proceeding onwards, there are apparently no obstructions to the navigation of the river, until past the western entrance of the Shaywan-ho. In the channel nearly due west from the Choo-shan Pagoda, a sunken rock is marked on the chart; it was visible to us about 7 feet above the water, and had a pole fixed on it; it lies about a cable's length from the eastern shore, and abreast of a small hill on the same side. There is anchorage along the North side of this channel.

Seau-sha Island is extremely low and flat, without trees or habitations of any kind on it, and I should think was frequently inundated. To the Southward and abreast of its Eastern end, there is, I believe, a shoal extending from the Southern shore to within a cable's length of this part of the Island, on which H. M. ship Callope grounded. It is said there are only 9 feet of water on it.

Silver I. Marion Rock. Pi-sin chow. E-ching. Nin-gan-shan Pagoda.

Silver Island.—We passed up and beat down to the Southward of this island; depths will be found less than are marked on the charts, and very unequal; going up, the point on the South or left bank may be rounded pretty close, but just within it, abreast of the Island, it shoals. Borrowing close to this side to weather the west end of Silver Island, we shoaled to $3\frac{1}{2}$ fathoms, for several casts. Off the west end of Tasha is a bank which we shoaled on, working out.

Marion Rock.—Proceeding on past Golden Island, there is a sunken rock marked on the chart close over to the Northern shore; it lies however directly mid-channel, and in a direct line between the West point of the creek on the South bank, and the most elevated and remarkable part of the bank on the North shore; it has been built upon by the Chinese, and now shows 4 or 5 feet above the water. I observed a whitewashed mark on the rocks below the Pagoda on Golden Island; and after passing the rock, we brought the Pagoda and this mark in one. It then appeared in a direct line over and on with the rock, and appears intended as a mark for it. On our return down, by keeping the Pagoda open to the right of the mark, we passed close to the Southward of it.

Pi-sin-chow Island.—Midway between the Eastern point of this island, and on the North side, is a bank uncovered, 3 or 4 feet above the water, with apparently a navigable channel, used by the junks on either side of it; we stood near it, and tacked in 15 fathoms of water, not far from it. Along the SE. side of this Island (Pi-sin-chow) are several banks, which uncover at low water; they lie parallel to the shore a short distance from it, and are steep.

After passing E-ching, there are some remarkable hills; first, a range marked on the chart as stretching to the NW., but also to the NE. Next, westward of them, are two conical hills with some table land at the back.

A very little farther west is a remarkable table hill. Westward of the creeks at E-ching there are some shoal patches near the North shore, on the side of one of which we anchored during the night, the wind failing us; the weather next morning was too hazy to observe any bearings to get our position, but I sounded during the night, and found 4 fathoms above half a cable from the shore, rocky bottom.

Off the mouth of the creek on the North shore, and SE. by E. from the two hills, we had some shoal casts, over a rocky uneven bottom, extending to the Southward one third of the way across the river; we tried to pass through the creek which leads to the Southward of Tsau-shan, or rather Tsau-hiau-hia Island, but advancing about one third the distance were obliged to retrace our steps, finding only half the depth of water mentioned in the chart. It is a very narrow channel, a longer vessel than our own would have been obliged to have returned the best part of the way stern foremost. Off the NE. side of Tsau-hiau-hia Island a shoal extends full one third of the way across the river. Its Northern edge uncovers for about three cables' length in a direction parallel to the shore; when abreast of the centre part, Nin-gan-shan Pagoda bore N.N.E. $\frac{1}{2}$ E. The Island has pretty deep water close up to it to the Eastward of this shoal.

From what has been observed, I consider it evident that there is at this present time full 15 feet less water than usual in the river. After passing above Choo-shan Pagoda we never felt any upward stream of tide, although there was the usual rise and fall. There was sometimes a short period of slack water before high water, but rarely. The usual strength of the tide downwards was from $1\frac{1}{2}$ to 2 knots.

Position of Macao. A Free Port. Chinese Custom-house abolished.

Section 10.

PORT OF MACAO.

This city lies on a peninsula forming the southeastern end of the large island of Hiangshán, having an open roadstead on the east, and a small secure harbor on the west. Off the south end of the town about three miles, is another anchorage, between two islands, called the Typa, where ships lie securely. The entrance to the Inner Harbor has only thirteen feet water, or sixteen in spring tides, and the Harbor itself cannot easily contain more than twenty ships; larger vessels lie in the Typa or the Roads, to complete their lading. The colony of Macao was placed on a more independent footing than it had heretofore been in relation to the Chinese government, by the convention between K'ying and Gov. Pinto in 1843, at which time Portuguese vessels were also permitted to trade with the five open ports. The authority of the government was formally extended to the Typa anchorage, where a fort was erected in 1844. The entire area of the Portuguese jurisdiction, from the Barrier, which divides the colony from the district of Hiangshán, to the Typa and out into the Roads, is about twenty square miles.

The town of Macao lies near the south end of the peninsula, reaching across to both shores, and inclosed by a wall on its north side; beyond this wall towards the Barrier are cultivated fields, with the village of Wángghia, or Mongha, and other hamlets, occupied almost entirely by Chinese. By a decree of Donna Maria, dated Nov. 20th 1845, the port was declared to be free to the commerce of all nations, excepting of course the traffic with the Chinese, which still existed according to the stipulations made with that government. However, on the 5th of March, 1849; Gov. Amaral issued a proclamation declaring that, "the Portuguese custom-house having been closed, it cannot possibly be allowed that a foreign custom-house should continue open at this place, and that duties should be any longer there collected on all sorts of goods, provisions, materials, and other commodities, on most of which duties and other export charges had already been paid, the imports of all kinds from the ports of China shall be free from the payment of any duties at Macao, after the 12th of March, and no receipt of duties by the hoppo shall be suffered to be made." The Chinese custom-officers living at Macao were accordingly sent out of the place; the trade with the Chinese rapidly decreased, all the leading merchants moving their establishments to Whampoa, where special inducements were held out by the governor-general for them to settle. The taxes laid on houses and people to defray the expenses of the settlement, of which the Chinese were obliged to pay their share, were also somewhat increased, which tended further to diminish this part of the population. In two or three years, however, the trade of the colony began to revive, and during the insurrectionary troubles in 1851 and 1855

Trade in Lorchas. Port Regulations at Macao. Seamen deserting. Fines.

throughout the adjoining prefecture of Kwangchau, it nearly equalled the prosperous times of 1843. The largest part of the commerce of the place is carried on in lorchas, of which there are many owned and manned by Chinese, and carrying at least three Portuguese to manage the business. These vessels are found along the coast from Shanghai to Hainan, and some of them return to Macao only after a long interval. Many of them have been employed by the Chinese to convoy and protect their junks against the pirates along the coast. They also carry goods to many small places, and are regarded with suspicion by the natives on some parts of the coast. Macao itself has no manufactures or exports, and very little commerce with Portugal. The trade with Manila, Singapore, and other places in the Archipelago, still employs three or four ships.

The following port regulations now in force were issued March 12th, 1855, signed by José Carlos Barros, acting secretary to the Governor.

Regulations of the Port of Macao.

1st.—Any vessel nearing the Roads, and wanting a pilot, must have its national flag at the foremast head.

2d.—No notice will be taken at the office of the Captain of the Port of any damage occurring to vessels coming in or going out when not piloted by the office pilot.

3d.—The Captain of the Port may not employ any pilot without having previously examined him; and as it is necessary to keep a pilot establishment, vessels coming in or going out without such office pilot may not be exempted from payment of pilotage dues.

4th.—The captain of a vessel, or his agent, shall report his vessel at the Captain of the Port's office within 24 hours after his arrival, and in default of doing so he shall pay a fine of 100 dollars.

5th.—The captain of a vessel on landing shall present his ship's papers at the office of the Captain of the Port; where they will remain until his departure.

6th.—Vessels cannot enter the Inner Harbor with gunpowder on board. Such gunpowder must be deposited at the Bar Fort, from whence it can be received on going out.

7th.—It is forbidden to throw ballast or rubbish overboard in port, under a penalty of 100 dollars.

8th.—Vessels are not permitted to change their moorings in the river without the permission of the Captain of the Port.

9th.—Vessels must keep their sheet anchors ready for letting go.

10th.—If any man deserts his vessel, the same must be reported to the Captain of the Port, who will assist in his apprehension, and if during the stay of the vessel in port the man cannot be found, and should appear after her departure, he shall be arrested (if so required) and delivered to the police authorities.

11th.—It is forbidden to land invalids without the consent of the Captain of the Port. For contravention of this a fine of 100 dollars will be imposed.

12th.—If the captain of a vessel wishes to send any sick man to the hospital, he must apply to the Captain of the Port; the vessel being answerable for the expenses.

13th.—The captain of a vessel may not discharge either part or the whole of his crew in Macao, without the permission of the Captain of the Port.

14th.—Vessels coming to in the Roads, with intention of loading or unloading, must report at the office of the Captain of the Port, as ordained by the 5th Art. The agents will be held answerable for the neglect.

Tonnage Dues.

Hiring of Lorchas.

Custom-house Go-downs.

The rules respecting the payment of tonnage and anchorage dues have also been modified and reduced:

Regulations respecting Tonnage Dues.

1. Native and foreign vessels which heretofore were obliged to pay five mace per ton in the anchorage of Typa, shall from this date pay one mace per ton.

2. This duty so reduced shall be paid only by vessels that remain more than six days in the Typa.

3. This anchorage duty shall be sufficient for one year, to be reckoned from the date in which the vessel anchors for the first time in the harbor.

4. Thus, as by the preceding article vessels which have once paid tonnage dues, may enter and depart freely for the space of a year; in the same manner vessels, which within one year enter and leave the harbor oftener than once, shall be obliged to pay duty for that year, when the sum of the days they have remained at anchor shall exceed six.

5. No tonnage dues shall be paid by:—

§ 1. Vessels, whether native or foreign, not exceeding one hundred tons.

§ 2. Ships that have paid in the river of Macao, for the space of a year from the time they anchored in the first port.

§ 3. Vessels having a cargo entirely of rice.

§ 4. Vessels that enter having suffered great damage, for the whole time they are employed in repairs.

§ 5. Steam vessels employed in conveying passengers between Hongkong, Canton, and Macao.

The importation of arms and armor, cannon, projectiles, fire-balls (not including Chinese fire-crackers and fireworks), powder and orchil, is prohibited by a decree of March 31st, 1846. The manifests of all merchant vessels intended to unload at Macao shall be presented at the custom-house in Portuguese, signed by the captain or agent; ships leaving the river shall receive their manifests from the custom-house. When Portuguese lorchas are employed for discharging vessels, they can only demand for each trip,

For lorchas under 100 tons, \$10 to the Typa, \$15 to the Roads
between 100 and 150 tons, \$13 to the " \$18 to the "
larger than 150 tons, \$15 to the " \$20 to the "

If the captain chooses to employ Chinese boats, the authorities will take no cognizance of any damage the goods may receive in the passage. If the chief officer of the custom-house see no prohibited articles in a ship's manifest, he shall order a proper register to be made with a calculation of the amount of duties on these goods on the valuation according to the last tariff, and inform the government of the same. A copy of the manifests of such vessels as enter the river and their tonnage-measurement, used also to be sent to the Chinese officer of customs.

The custom-house go-downs are fine places for storing goods, and their dryness and the care kept over the merchandize deposited there, offer additional advantages. Persons are not of course obliged to use them, but when they do, the custom-house coolies must be employed as porters, and can also be engaged to carry goods elsewhere, according the following scale, which also serves as a guide when hiring other coolies:

*Rates of Portorage and Storage.**Clearance.**Illegal Trade.*

The charges for storage in the custom-house go-downs are reckoned by the half-month and month, on the following scale. Packages not enumerated in this list pay in proportion to their size, articles for personal use not being charged.

TABLE of the portorage, storing, and labor of coolies, and rent for merchandise and goods received into the go-downs of the Custom-house of Macao.

	PORTORAGE.		RENT PER MONTH.	
	By package	Per pecul.	By package	Per pecul.
	c. c.	c. c.	c. c.	m. c. c.
1 Bale of Cotton,.....	3 7½	1 5	3 7½	0 1 5
1 Large bundle of Shark's-fins,.....	3 0	1 5	3 0	0 1 5
1 Bag of Betel-nut,.....	2 6¼	1 5	2 6¼	0 1 5
1 Basket Bicho de mar,.....	3 7½	1 5	3 7½	0 1 5
1 Do. Seaweed (brede de mar).....	3 7½	1 5	3 7½	0 1 5
1 Do. Fish-maws,.....	3 7½	1 5	3 7½	0 1 5
1 Box of Glue,.....	3 0	1 5	3 0	0 1 5
1 Basket of dried fruits,.....	3 7½	1 5	3 7½	0 1 5
1 Box of Tin,.....	0 6¼	1 5	0 6¼	0 1 5
1 Bale of 25 Hides,.....	6 0	1 5	6 0	0 1 5
1 Do. of Tinder,.....	3 3¼	1 5	3 3¼	0 1 5
1 Bag of Pepper,.....	2 6¼	1 5	2 6¼	0 1 5
1 Basket of shell-fish,.....	3 3¼	1 5	3 3¼	0 1 5
1 Bag of Seriboa,.....	3 0	1 5	3 0	0 1 5
1 Fine goods which are of small weight, being so regular shall pay by the package,.....		3 m.		
Do. Do. being large packages,.....		6 m.		
1 Cases and small packages,.....		1 m.		
For 1 Case of Cambric of 100 pieces,.....				0 2 0
1 do. Chintz 50 do.,.....				0 1 5
1 do. Longcloth 50 do.,.....				0 2 0
1 Bale of Woollen cloth or Camlets, 10 pieces,.....				0 2 0
1 do. Long-Ells 20 do.,.....				0 2 0
1 Pipe and half pipe,.....				1 0 0
1 Quarter pipe (or larger, in proportion).....				0 2 0

The custom-house charges a dollar a day for the use of its weights; passes or certificates are also given to importers when requested, receipts for the payment of anchorage dues to the captains of ships about leaving, and all certificates of clearance; the two last are to be presented to the harbor-master that he may furnish a port-clearance or pass. Each ship pays three dollars for these documents, of which two goes to the Chinese office.

*Section 11.***FOREIGN ILLEGAL TRADE.**

This branch of commerce constitutes such an important part of the foreign trade, that it demands a separate notice. The chief article is opium, which is now carried to all parts of the empire without any interference from the authorities, who doubtless receive a perquisite for connivance from the dealers. If the traffic in opium was

Opium trade. Salt trade. Exportation of Rice. Trade at Swatow.

legalized, the change would conduce to render all smuggling and illegal trafficking more and more discreditable; but there is no immediate prospect of the Chinese government altering its laws in this respect. The use of the drug has greatly increased since the war with England, and the East India Company seem to be able to supply it as the demand keeps up. The objectionable feature of the opium trade in a commercial point of view, that of setting at nought the laws of the land whereby it demoralizes all connected with it, still continues, and its use causes the same disastrous results as ever to the consumer. Receiving ships now remain at Cumising-moon, Swatow, Chimmo, and Wusung, but those formerly kept at Amoy, Mandarin Head, and Lukong, have been removed, and the opium is now taken into port. Steamers, schooners, and lorchas take it with other goods to other points, as Hoi-hau in Hainan I., Tienpak, Wanchau fû, &c., where the demand is less.

The illicit traffic in salt is carried on to a considerable extent along the coast between Whampoa and Macao down to Hainan, but there are no available data as to its extent. The article is almost wholly of native manufacture, but as its preparation and sale are strictly confined to the official agents appointed to manage the gabel, their monopoly is constantly trespassed on by the people. By an Order in Council of Feb. 24th, 1843, British subjects are prohibited going to any part of China beside the Five Ports, for any purpose whatever, under a penalty of £100, or three months' imprisonment, on conviction. No convictions have been made, nor is it probable that any will be, as the regulation is regarded as a dead letter.

The exportation of rice from any port in China has also been declared illegal by the high authorities; but there is no serious difficulty in good seasons of obtaining this grain at Amoy, Ningpo, and Canton, for shipment to other Chinese ports, a very little being carried abroad to California. The responsibility felt by the authorities in every part of China, to maintain the supply of breadstuffs in their own particular districts, induces them to keep a watchful eye on this traffic, though they do not yet know that their carefulness is unnecessary, as the demand at different points induces merchants to equalize the supply better than they can do.

Considerable trade has sprung up at Swatow 山頭, a town lying at the mouth of the Han R. on which Cháu-chau fû is situated, in the eastern end of the province of Kwángtûng. The goods pay the same duties as in Chinese vessels, and are carried into the country in native boats. The ships lie off the harbor, and the native merchants transact their business there.

Since the summer of 1854, when the high price of rice at Canton (\$5 to \$6 per pecul) led to the attempt to import it from Formosa, there has been considerable trade at Ape's Hill, and some other ports. A ship lies there to receive grain, camphor oil, hemp, pulse, camphor wood, or other articles in exchange for specie, cloths, &c.; and the former are taken away by other vessels. Ape's Hill lies

Trade in Formosa, at Ape's Hill, &c.

Directions for Kilung Harbor.

southeast from Fort Zealandia, or Kok-si-con, about 30 miles. The customary duty is paid on goods taken in and out, and a fee of \$150 in addition on each ship which loads at this port, to the chief officer of the place. Trade has also been attempted at Tan-shwui in the north of the island, and at Kok-si-con, which the native authorities seem disposed to encourage; it will doubtless become more and more important, and lead to further intercourse with this fertile island.

At the northern end of Formosa is Killon Harbor, formerly frequented by the Spaniards, who endeavored to settle there in 1626, when the Dutch had possession of Fort Zealandia; and by whom they were expelled about ten years after. The existence of large beds of coal in this neighborhood has long been known, and there have been several junk loads imported into Hongkong, where its quality has been found satisfactory. The importance of this deposit led Commodore Perry to send two ships of his squadron there in July, 1854, and the following account has been furnished for this work by Lieut. G. H. Preble, U. S. N., who conducted the survey. His charts are to be published in connection with other surveys made by officers in the Expedition under Commodore Perry. The harbor was visited and surveyed in 1824 by Capt. Parkyn of the British vessel "Merope," and again by Capt. Collinson, R. N., in 1843, whose chart has not been published.

Sailing Directions for Kilung Harbor by Lieut. Preble, U. S. N.

Kilung; Kelung, or Killon Harbor, (Kilung Tow 岐龍頭 Head of promontory as it is sometimes called,) is situated in the middle of the bight between the north and northeastern points of the island of Formosa, in Lat. 25° 10' N., Long. 121° 48' E., and is landlocked on all sides, excepting the North; from that side protection is afforded by the coral reefs, which bound both sides of the harbor, stretching round to the North, and by a small rocky islet which lies across the entrance. The entrance of the harbor is half a mile wide, and can be readily known and found by the high and bold island of Kilung, or Kilon-khid, which lies directly off it, only three and a half miles to the northward and eastward, and by the high craggy land to the westward of the entrance, of which outlines are given on the chart. Kilung Island is evidently of volcanic formation, and its southwestern side suggests that it may be the wall of a crater, one side of which has been broken down. It is between five and six hundred feet high.

Image Point is the western point of the harbor, and is a low point extending from the high craggy land before mentioned. The name is considered appropriate from the action of the sea having cut away the soft sandstone of which it is composed, leaving boulders of a darker and harder stone, elevated on pedestals which at a short distance have the appearance of images of men and beasts. The eastern side of the entrance is formed by the low flat island already mentioned, called Bush Island by Capt. Collinson (by the Chinese Tong-fung-see,) and by Palm Island to the eastward of it, between which and Tong-fung-see there is a passage for boats only. The island of Tong-fung-see is nearly awash, and from the distance of Kilung Island cannot be readily distinguished or separated from the high land of the main behind it. It has on its inner or southern edge a few shrubs or small trees, which grow out of a patch of old coral that appears to have been elevated out of the sea upon the sandstone of which the island is composed.

Reef on N. of Formosa. Tong-fung see I. Crag Peak. Kilung Town.

“Making and keeping Kilung Island well to the Eastward, the entrance to the harbor can be approached without fear, as there are no hidden dangers, and the soundings are not less than twenty fathoms to within one quarter of a mile of Image Point and the islands facing the northeastern entrance. The currents, however, are known to be strong and varying, and the shores so steep as to afford no secure anchorage for a vessel when she is in danger. It is therefore necessary to caution the navigator, that with a strong monsoon blowing in the offing, he is likely when near the entrance to lose the wind, or have only a light land or sea breeze. In the middle of the entrance the soundings are from twelve to fourteen fathoms, decreasing a little towards the coral patches which line the shores on each side.

“In making the harbor from the Westward, a dangerous reef off the north point of Formosa, reported by Lieut Gordon, R. N., of the surveying-vessel *Royalist*, is to be avoided. It is in Lat. $25^{\circ} 18' N.$, Long. $121^{\circ} 35' E.$, and extending about a mile off, encircles the coast to the Westward. The North point of the island, instead of being a high perpendicular head as generally described, terminates in a very low point.

“After passing Kilung Island, steer to the southward, and when well up with the harbor entrance, a remarkable sugar loaf hill will be seen within and on the western side of the harbor, called Crag Peak on the chart; bring it to bear South by West, which course will take you down in mid-channel clear of the coral reefs on both sides.

“The best anchorage for large vessels is in 8½ to 10 fathoms half a mile S. by W. of the island of Tong-fung-see, sheltered by it, and some dangerous coral shoals, with the outer points of Junk and Boat Passage bearing E. by N. & N just open, and Crag Peak bearing SW. This was the anchorage of the U.S. ship *Macedonian* for nearly two weeks. The holding-ground, a stiff mud and sand, is excellent. Upon the northern inner point of Junk and Boat Passage, which is also the Southwestern point of Palm Island, there are the remains of an old fortification, and beyond it the village of Se-ar-le-how. Anchorage for a single vessel in eight or ten fathoms can also be had in Merope Bay to the Southward of Image Point, on the Western side of the entrance. Captain Parkyn mentions having rode out a typhoon at this anchorage. The small village Perreang lies at the head of the bay.

“Vessels drawing less than fifteen feet can obtain a snug anchorage in five and six fathoms half a mile nearer Kilung to the southward of a coral shoal which extends to the eastward of Crag Peak. Northwest of this anchorage there is a small but very remarkable rock, which resembles a gothic ruin, and which I have called Ruin Rock. It is called in Collinson's survey, the “Observatory,” and he gives its latitude $25^{\circ} 09' N.$, Longitude $121^{\circ} 47' E.$. A quarter of a mile SW. by S. from this anchorage is Sow-wan point, where there is a small settlement and covered market. Stretching across the harbor from Sow-wan Point is the anchorage of junks and Chinese craft in two fathoms water; beyond them there is nothing but shoal water and extensive mud flats, dry at low tide. The town of Kilung lies at the bottom of the harbor, three quarters of a mile to the southward, and can only be approached by small boats at high water. There is a good landing-place for boats at Sow-wan Point, and from thence a road and causeway to Kilung.

“Between Junk anchorage and Kilung are two small islands. “Howyet,” the easternmost, is high, round and covered with trees. The westernmost is low, flat, and clothed with only a few small bushes. There are several coal mines about one mile E. S. E. from Kilung, situated on the banks of the small and shallow stream, which branches off from the head of the harbor in that direction. They were visited by a British officer in 1847, as noticed in the Chinese Repository for July, 1849; and also by the officers of the *Macedonian*, and specimens of the coal procured. They appeared to be a continuation of veins opened on the seashore of Qua-see-kow Bay, two miles E. by S. of them, discovered and visited by the officers of the *Macedonian*. The Chinese authorities were very averse to giving any information respecting the mines, and falsely stated that

*Qua-see-kow Bay and Coal Mines.**Supplies.**Coal Harbor.*

they were three days' journey distant on the shores of a canal, which separates a small island from the eastern side of Formosa, that the inhabitants were savages and cannibals, not under their control, and that it would be exceedingly hazardous to get to them either by sea or land. Their immediate neighborhood was fortunately disclosed by a Chinese fisherman, who came on board in disguise, and offered to conduct to them for a reward of three dollars. Relying somewhat upon the statement of the Chinese officials, the boats were armed and equipped for a three days' cruise, and dispatched from the ship at daylight. Before 10 o'clock the same morning, they had returned, having visited and examined the mines, which were only three miles distant via Junk and Boat passage. The next day the survey of the Harbor was extended to include their locality, and several of the officers landed at Qua-see-kow Bay and walked over the hills to Kilung. Afterwards fifty tons of coal were procured from these mines by the U.S. storeship Supply. The impression on board the Macedonian was that the whole northern end of Formosa is stored with bituminous coal of good quality, and easy of access if the prejudices and exclusiveness of the Chinese can be overcome; which the great increase of steaming vessels in the Chinese waters renders very desirable. The coal procured was purchased for \$1.50 per ton. Opposite Junk anchorage on the western side of Kilung Harbor, there is a small but shallow inlet making up to the northward and southwestward, by means of which communication is had with Tan-shwui on the northwestern end of Formosa. The water communication for small boats between the two places is complete with the exception of one portage, which is almost in sight from Kilung.

The immediate boundary of Kilung Harbor is composed of irregular hills three to five hundred feet high, beyond them inland the country is exceedingly mountainous, and rises in places to over two thousand feet above the sea level. A limited supply of fresh water, sufficient for the ordinary requirements of a merchant ship, can be obtained near each of the seven little fishing villages around the shores of the Harbor, but the water is generally of a poor quality. A man-of-war or large vessel should not rely upon filling up her water here. The best obtained by the Macedonian was at Q.R. village south of Ruin Rock. Pigs, poultry, eggs and vegetables were obtained at reasonable prices. Sulphur, alum and camphor, were among the articles exposed for sale in the shops, and of sulphur there seemed a great abundance. The rocks which line the eastern shore of the Harbor were so strongly impregnated with iron as to affect the needle of the compass when placed upon them. Among the junks in harbor were several from Amoy, with which place there is a frequent communication and considerable trade. Tides were observed at Tong-fung-see, and the average rise and fall ascertained to be only two feet. The greatest fall of tide was three feet.

Coal Harbor.

Two and a half miles to the Eastward of Kilung Harbor there is a small cove open to the northward, one quarter of a mile wide at its entrance and three eighths of a mile deep, which I have called by this name on account of its proximity to the coal mines opened by the Chinese on the hill-sides of the South shore of Qua-see-kow Bay. It offers anchorage for one or two vessels only, but should these mines ever be worked by Europeans, would be valuable as a port of shipment. The coal could be conveyed by railroad along the west shore of Qua-see-kow Bay, beneath the cliff to Harbor Rock, and a short T pier from the north side of Harbor Rock would enable a ship to lie safely alongside in three or four fathoms of water and receive her cargo. The Chinese do not understand the art of mining the coal properly, and until they are worked under European direction, these mines will be of but little value. The best anchorage in this harbor is in 8½ fathoms; no directions are necessary for entering it, the chart being a sufficient guide.

CHAPTER V.

FOREIGN COMMERCE WITH JAPAN.

Section 1.

AMERICAN TREATY WITH JAPAN.

IN 1853, the government of the United States sent an expedition to Japan under the command of Commodore Perry to endeavor to come to an understanding with the court at Yedo respecting the treatment given to the crews of American vessels wrecked on the coast of that country, and to ascertain whether it could furnish coal and provisions to the steamers plying between China and California. A general trade between the two countries was also proposed by President Fillmore in his letter, which was delivered to the Japanese commissioners at Goriham, a small hamlet south of Uraga in the Bay of Yedo, on the 14th of July, 1853. The Japanese authorities requested some delay in replying to these propositions, and Com. Perry agreed to defer their consultation to the following year. When he returned in Feb. 1854, the Japanese had concluded to accede to the propositions of the American President, and had appointed four commissioners of high rank, *viz.*, Hayashi, a prince councillor (Dai-gaku-no-kami); Ido, prince of Tsus-sima; Izawa, prince of Mimasaki; and Udono, a member of the Board of Revenue, to treat with his envoy. The treaty was signed at Yokohama, a village a few miles south of the town of Kanagawa, but it is called after the most important of the two places. The ratifications were exchanged at Simoda, Feb. 21st, 1855.

Treaty of Kanagawa.

ART. I.—There shall be a perfect, permanent, and universal peace, and a sincere cordial amity between the United States of America on the one part, and the Empire of Japan on the other part, and between their people respectively, without exception of persons or places.

ART. II.—The port of Simoda, in the principality of Idzu, and the port of Hakodadi, in the principality of Matsmai, are granted by the Japanese as ports for the reception of American ships, where they can be supplied with wood, water, provisions, and coal, and other articles their necessities may require, as far as the Japanese have them. The time for opening the first named port, is immediately on signing this treaty; the last named port is to be opened immediately after the same day in the ensuing Japanese year. [Note.—A tariff of prices shall be given by the Japanese officers of the things which they can furnish, for which payment shall be made in gold and silver coin.]

ART. III.—Whenever ships of the United States are thrown or wrecked on the coast of Japan, the Japanese vessels will assist them and carry their crews to Simoda or Hakodadi, and hand them over to their countrymen ap-

<i>Treaty of Kanagawa.</i>	<i>Limits.</i>	<i>Trade.</i>	<i>Supplies.</i>	<i>Consuls.</i>
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pointed to receive them; and whatever articles the shipwrecked men may have preserved, shall likewise be restored; and the expenses incurred in the rescue and support of Americans and Japanese who may thus be thrown upon the shores of either nation, are not to be refunded.

ART. IV.—Those shipwrecked persons and other citizens of United States shall be free as in other countries, and not subjected to confinement, but shall be amenable to just laws.

ART. V.—Shipwrecked mariners and other citizens of the United States, temporarily living at Simoda and Hakodadi, shall not be subject to such restrictions and confinement as the Dutch and Chinese are at Nagasaki, but shall be free at Simoda to go where they please within the limits of seven Japanese *ri* (or miles), from a small island in the harbor of Simoda, marked on the accompanying chart hereto appended; and will in like manner be free to go where they please at Hakodadi, within limits to be defined after the visit of the United States' squadron to that place.

ART. VI.—If there be any other sort of goods wanted, or any business which shall require to be arranged, there shall be careful deliberation between the parties in order to settle such matters.

ART. VII.—It is agreed that ships of the United States resorting to the ports open to them, shall be permitted to exchange gold and silver coin and articles of goods, for other articles of goods, under such regulations as shall be temporarily established by the Japanese government for that purpose. It is stipulated, however, that the ships of the United States shall be permitted to carry away whatever articles they are unwilling to exchange.

ART. VIII.—Wood, water, provisions, coal, and goods required, shall only be procured through the agency of Japanese officers appointed for that purpose, and in no other manner.

ART. IX.—It is agreed that if at any future day the government of Japan shall grant to any other nation or nations privileges and advantages which are not herein granted to the United States and the citizens thereof, that these same privileges and advantages shall be granted likewise to the United States and to the citizens thereof, without any consultation or delay.

ART. X.—Ships of the United States shall be permitted to resort to no other ports of Japan but Simoda and Hakodadi, unless in distress or forced by stress of weather.

ART. XI.—There shall be appointed by the government of the United States consuls or agents to reside in Simoda, at any time after the expiration of eighteen months from the date of the signing of this treaty, provided that either of the two governments deem such arrangement necessary.

ART. XII.—The present convention having been concluded and duly signed, shall be obligatory and faithfully observed by the United States of America and Japan, and by the citizens and subjects of each respective Power; and it is to be ratified and approved by the President of the United States, by and with the advice and consent of the Senate thereof, and by the august Sovereign of Japan; and the ratifications shall be exchanged within eighteen months from the date of the signature thereof, or sooner if practicable.

After the squadron had visited Hakodadi as intimated in ART. V., and returned to Simoda, there was a long discussion on many points with the Japanese commissioners, they not being willing as yet to grant general trade, but preferred to wait and acquire more experience before entering into a commercial treaty with the United States. The following additional Regulations were, however, agreed to, and though not forming part of the Treaty of Kanagawa, have

<i>Limits on shore.</i>	<i>Landing-places.</i>	<i>Mode of Trade.</i>	<i>Pilots and Pilotage.</i>
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the same force. The provisions respecting trade in the 9th article show the intention of ART. VIII. of the Treaty.

Additional Regulations.

ART. 1st.—The Imperial Governors of Simoda will place watch-stations wherever they deem best, to designate the limits of their jurisdiction;—but Americans are at liberty to go through them unrestricted, within the limits of seven Japanese *ri*, or miles; and those who are found transgressing Japanese laws may be apprehended by the police and taken on board their ships.

ART. 2d.—Three landing-places shall be constructed for the boats of merchant ships and whale ships resorting to this port; one at Simoda, one at Kakizaki, and the third at the brook lying south-east of Centre Island. The citizens of the United States will, of course, treat the officers with proper respect.

ART. 3d.—Americans, when on shore, are not allowed access to military establishments or private houses, without leave; but they can enter shops and visit temples as they please.

ART. 4th.—Two temples, the Rioshen at Simoda, and the Yokushen at Kakizaki, are assigned as resting-places for persons in their walks, until public-houses and inns are erected for their convenience.

ART. 5th.—Near the temple Yokushen at Kakizaki, a burial-ground has been set apart for Americans; where their graves and tombs shall not be molested.

ART. 6th.—It is stipulated in the treaty of Kanagawa, that coal will be furnished at Hakodadi, but as it is very difficult for the Japanese to supply it at that port, Commodore Perry promises to mention this to his government, in order that the Japanese government may be relieved from the obligation of making that port a coal dépôt.

ART. 7th.—It is agreed that henceforth the Chinese language shall not be employed in official communications between the two Governments, except when there is no Dutch interpreter.

ART. 8th.—A harbor-master and three skillful pilots have been appointed for the port of Simoda.

ART. 9th.—Whenever goods are selected in the shops, they shall be marked with the name of the purchaser and the price agreed upon, and then be sent to the Goyoshi, or Government office, where the money is to be paid to Japanese officers, and the articles delivered by them.

ART. 10th.—The shooting of birds and animals is generally forbidden in Japan, and this law is therefore to be observed by all Americans.

ART. 11th.—It is hereby agreed that five Japanese *ri*, or miles, be the limit allowed to Americans at Hakodadi, and the requirements contained in Article 1st of these Regulations are hereby made also applicable to that port within that distance.

ART. 12th.—His Majesty, the Emperor of Japan, is at liberty to appoint whoever he pleases, to receive the ratification of the Treaty of Kanagawa, and give an acknowledgment on his part.

Regulations respecting Pilots in the Port of Simoda.

A lookout place shall be established at some convenient point, from which vessels appearing in the offing can be seen and reported, and when one is discovered making apparently for the harbor, a boat shall be sent to her with a pilot.

And in order to carry this regulation into full effect, boats of suitable size and quality shall always be kept in readiness by the harbor-master, which, if necessary, shall proceed beyond Rock Island, to ascertain whether the vessel in sight intends entering the harbor or not. If it may be the desire of the mas-

Position of Simoda. Hakodadi. Position and trade. Commerce with Japan.

ter of said vessel to enter port, the pilot shall conduct her to a safe anchorage, and during her stay shall render every assistance in his power in facilitating the procurement of all the supplies she may require.

The rates of pilotage shall be : for vessels drawing over 18 American feet, fifteen dollars ; for all vessels drawing over 13 and less than 18 feet, ten dollars ; and for all vessels under 13 feet, five dollars.

These rates shall be paid in gold or silver coin, or its equivalent in goods, and the same shall be paid for piloting a vessel out as well as into port.

When vessels anchor in the outer harbor, and do not enter the inner port, only half the above rates of compensation shall be paid to the pilot.

The prices for supplying water to American vessels at Simoda shall be 1400 cash per boat-load, (the casks being furnished by the vessel.) And for wood delivered on board, about 7200 cash per cubic of five American feet.

The town of Simoda opened to the American trade by this Treaty is a small seaport in the principality of Idzu, near the southeastern end of Nippon, and about 150 miles by sea from Yedo. It is a poorly built town, containing about 7000 inhabitants, most of whom derive their living from agriculture and fishing. Its harbor affords a secure and easy retreat to the small vessels plying along the coast and up to the capital, and from hence communications are soon sent overland to Yedo. The town lies at the opening of a richly cultivated valley, through which the Inodzu-gawa flows, a small stream barely sufficient at high tide to float loaded scows a few miles up the valley. Simoda is surrounded with hills, presenting a great variety of picturesque scenery ; the intervals are highly cultivated, and the slopes are terraced a good part of their sides.

The town of Hakodadi is larger and richer than Simoda, and forms the entrepôt of the trade with the eastern part of Yesso, receiving the stores and goods from Nippon with which the settlers and aborigines of the island are supplied. Rice, wheat, pulse, vegetables, and marine produce, are brought from the south in such quantities as to indicate that the land in Yesso is very inadequately cultivated. The town is prettily situated on the eastern side of the harbor, on the slope of wooded hills, and is better built than Simoda ; its dockyards, store-houses, and shops indicate too the prosperity and traffic of the inhabitants. It lies in the principality of Matsmai, about thirty miles east of the city of that name, and has constant intercourse with all parts of the island. It is probable that it will be made an imperial city, like Simoda and Nagasaki, and placed under the control of special governors who can manage the trade with foreign countries.

These two ports in Japan, all whose harbors have been so long closed to western nations except the Dutch, have been opened so recently that it is idle to speculate as to the amount of commerce likely to be carried on with them. Nor can one guess what the staple imports will be until the wants of the Japanese people are ascertained ; nor what they can furnish in large amounts for foreign markets at a reasonable price. The commerce is likely to be of slow growth, and may be much hampered by unwise restrictions on the part of the Japanese authorities.

*Negotiations at Nagasaki.**English Convention.**Two Ports open.*

Section 2.

ENGLISH CONVENTION WITH JAPAN.

SOON after the Treaty of Kanawaga was made known to the world, the commander-in-chief of the English naval forces in the East Indies, Admiral Sir James Stirling, visited Nagasaki in H. M. S. "Winchester," with a small squadron, and entered into negotiation with the Japanese authorities. The obunyo and omedski (*i. e.* the imperial governor and his deputy) of Nagasaki, Mezino Chekfu-no Kami and Nagai Ewan Ocho, were appointed to treat with him, and their deliberations resulted in allowing the English permission to trade at Nagasaki and Hakodadi, for as nothing is said relating to the port of Simoda, it is to be inferred that English ships will not be allowed to trade there. On the whole this Convention is less advantageous than the Treaty of Kanagawa, especially in respect of intercourse with the people, which is quite cut off at Nagasaki by the Port Regulations appended to it. Trade at that port is also reduced to whatever the Japanese authorities please to allow, by the stipulations contained in ART. V. that the peculiar advantages of the Dutch and Chinese shall not be trenched on. The notes appended to the articles have not the same authority, and do not form part of the convention. — However, the whole will probably ere long be superseded by a new treaty, notwithstanding the strange stipulation in ART. VII.

Convention of Nagasaki.

I. The ports of Nagasaki (Fisen) and Hakodadi (Matsmai) shall be open to British ships for the purposes of effecting repairs, and obtaining fresh water, provisions, and other supplies of any sort they may absolutely want for the use of the ships.

The first Article of the Convention opens the ports of Nagasaki and Hakodadi to British ships for repairs and supplies. It opens the whole and every part of those ports, but ships must be guided in anchoring by the directions of the local government. Safe and convenient places will be assigned where ships may be repaired; workmen, materials, and supplies, will be provided by the local government, according to a tariff to be agreed upon, by which also the modes of payment will be regulated. All official communications will hereafter, when Japanese shall have time to learn English, be made in that language. A British burial-ground shall be set apart on Medsume sima, fenced in by a stone wall and properly protected.

II. Nagasaki shall be open for the purposes aforesaid from and after the present date, and Hakodadi from and after the end of fifty days from the Admiral's departure from this port. The rules and regulations of each of these ports are to be complied with.

The second Article provides that at each of the ports of Nagasaki and Hakodadi the port regulations shall be obeyed; but the Japanese Government will take care that they shall not be of a nature to create embarrassment, nor to contradict in any other way the general tenor and intent of the Treaty, the main object of which is to promote a friendly intercourse between Great Britain and Japan.

III. Only ships in distress from weather, or unmanageable, will be permitted to enter other ports than those specified in the foregoing articles, without permission from the Imperial government.

Japanese Laws to be observed. Future privileges. Stamps to prove nationality.

The third Article declares that only ships in distress from weather or unmanageable shall enter other ports than Nagasaki and Hakodadi without permission from the Imperial Government; but ships of war have a general right to enter the ports of friendly powers in the unavoidable performance of public duties, which right can neither be waived nor restricted; but Her Majesty's ships will not enter any other than open ports without necessity, nor without offering proper explanations to the Imperial authorities.

IV. British ships in Japanese ports shall conform to the laws of Japan. If high officers or commanders of ships shall break any such laws, it will lead to the ports being closed. Should inferior persons break them, they are to be delivered over to the commanders of their ships for punishment.

The fourth Article provides that British ships and subjects in Japanese ports shall conform to the laws of Japan; and that if any subordinate British subjects commit offences against the laws, they shall be handed over to their own officers for punishment; and that if high officers or commanders of ships shall break the laws, it will lead to the closing of the ports specified. All this is as it should be, but it is not intended by this Article that any acts of individuals, whether high or low, previously unauthorized or subsequently disapproved of by Her Majesty the Queen of Great Britain, can set aside the convention entered into with Her Majesty alone by his Imperial Highness, the Emperor of Japan.

V. In the ports of Japan either now open, or which may hereafter be opened, to the ships or subjects of any foreign nation, British ships and subjects shall be entitled to admission, and to the enjoyment of an equality of advantages with those of the most favored nation, always excepting the advantages accruing to the Dutch and Chinese from their existing relations with Japan.

The fifth Article secures in the fullest sense to British ships and subjects in every port of Japan, either now open, or hereafter to be opened, an equality in point of advantage and accommodation with the ships and subjects or citizens of any other foreign nation, excepting any peculiar privilege hitherto conceded to the Dutch and Chinese in the port of Nagasaki. If therefore any other nation or people be now or hereafter permitted to enter other ports than Nagasaki or Hakodadi, or to appoint consuls, or to open trade, or to enjoy any advantage or privilege whatever, British ships and subjects shall, as of right, enter upon the enjoyment of the same.

VI. This convention shall be ratified, and the ratifications shall be exchanged at Nagasaki on behalf of Her Majesty, the Queen of Great Britain, and on behalf of His Highness the Emperor of Japan, within twelve months from the present date.

VII. When this convention shall be ratified, no high officer coming to Japan shall alter it.

Arrangement regarding Stamps.

An arrangement made subsequently to the convention requires that British ships intending to visit Japan, shall be provided with a document in proof of their nationality, and as a check upon the conduct of vessels in Japanese ports; and her Majesty's Government has directed a form of certificate of registration to be adopted,* which has been accepted as satisfactory by the Japanese authorities; and merchant ships arriving in Japanese ports are to submit their certificate of registration to the officers to be appointed by the Japanese authorities, and to permit them to make such extracts from it as may seem good to them before such ships can be admitted to obtain repairs or supplies. Her Majesty's ships-of-war will not be provided with such documents, but the officers in command upon proper application will afford all reasonable information regarding their ships.

- * The form of register issued to vessels at the Custom-house; it is furnished by the Hongkong government.

<i>Port Regulations.</i>	<i>Bittern Rocks.</i>	<i>Sasagota Bay.</i>	<i>Cape Greig.</i>
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Regulations for the Port of Nagasaki.

Art. 1. Ships shall anchor within Iwo-sima, and there await the directions of the Governor.

Art. 2. No firearms to be discharged.

Art. 3. No person to land on any of the islands.

Art. 4. No soundings to be taken, nor boats to be pulling about.

Art. 5. Should any communication be desired, a boat of the upper officers shall be called; but no communication shall be held with merchant boats, and no exchange of articles take place, or trading of any sort.

The above being according to the law of Great Japan, all commanders and other officers shall obey the same, and orders shall be given to the crew that the aforesaid law shall not be broken.

Section 3.**ADDITIONAL SAILING DIRECTIONS FOR JAPAN.**

THE return of H. B. M. surveying-brig "Saracen," since the directions given on pp. 123-133 were printed, has made important additions to the nautical data given there, which are here introduced for the guidance of ships passing up through the Straits of Corea and Sangar to Hakodadi, or into the Pacific. The minute directions of Admiral Krusenstern for entering the harbor of Nagasaki are also inserted to complete the series.

Sailing Directions for the Straits of Sangar.

By Lieut.-Com. John Richards, R. N.

Approaching the Straits of Sangar from the SW., the Bittern Rocks lie W. by S. about 16 miles from Cape Gamaley. The largest of the group lies to the SW., in Lat. $40^{\circ} 31' N.$, Long. $139^{\circ} 31' E.$; it is about 12 feet high, and in size and appearance resembles the hull of a ship of about 200 tons. The smaller rock is about 6 feet high, and lies from this E.N.E. about a cable and a half. There is also a third rock awash to the SE. of these two, and forming nearly an equilateral triangle with them. They appear steep to; we got no bottom with 130 fms. at the distance of a mile and a quarter to the Westward of them.

The land about Cape Gamaley is moderately elevated and level. The coast between it and Cape Greig is low and sandy. The entrance to Sasagota Bay (of Krusenstern's chart) I found to be very narrow and barred right across, with only just sufficient depth to admit junks at high water. The bay itself appears to be nothing more than a large shallow lagoon; its entrance lies about six miles to the Southward of Cape Greig. Between Sasagota and Cape Greig the coast is very low and sandy, but safe of approach, having regular soundings, and very fair anchorage in Northeasterly winds. Cape Greig is in Lat. $41^{\circ} 8' 30'' N.$, Long. $140^{\circ} 17' 30'' E.$; it is remarkable from its peculiar form, and as the commencement of the high land extending to Cape Sangar. The outer part of the Cape presents a cliffy bluff, whose flat apex is 770 feet above the sea level, from whence the land descends to the Eastward. There are no dangers near, and the Cape itself is almost as steep as a wall. We got soundings in 85 fms. W. by S. $5\frac{1}{2}$ miles from it; 40 fms. will be found within a mile of it, and 22 fms. at two cables.

Cape Sangar bears from Cape Greig N. $31^{\circ} E.$, $8\frac{1}{2}$ miles. The bay between contains much foul ground, but may nevertheless be useful to vessels kept out of the Straits by Easterly gales. The bottom of this bay is very foul; the best anchorage is about $1\frac{1}{2}$ mile to the Northward of it (or about one-third the distance from Cape Greig to Cape Sangar,) in 12 fms., $\frac{3}{4}$ of a mile from the shore.

Cape Sangar. Gun Cliff. Cape Toriwisaki. Low I. and Tide Race.

Cape Sangar is in Lat. $41^{\circ} 16' 20''$ N, Long. $140^{\circ} 22' 45''$ E. The extremity of the Cape is a bluff of 362 feet, from whence the land rises to the height of 2200 feet at the distance of 4 miles inland; there is also a large rock of 300 feet high at the distance of two cables NE. of the bluff, connected to the Cape by a low neck of sand and stones. On a NW. and SE. bearing, this rock makes like an island at high water.

The Cape is steep to, but the strong eddies near it render it inadvisable to approach nearer than a mile. Cape Sangar to Gun Cliff is S. 74° E. $9\frac{1}{4}$ miles. In the bay between these points, and off the town of Memoyah, about half a mile from the shore, in 8 fms. will be found capital anchorage, indeed the best in the Straits next to Hakodadi. A little to the Southward of the town there is a fine stream of delicious water, very convenient for embarking rapidly. Wood is also abundant; several large junks were loading with timber at the time of our visit, and the beach was covered with squared logs of beech, cypress, and pine.

The Gun Cliff is steep to; it is about 200 feet high, and has a battery of six guns on its apex. There is also a remarkable black rocky cliff $\frac{3}{4}$ of a mile to the Westward.

After rounding this point, the approach to the shore is less steep, and bottom will be found in 30 to 40 fms. right across to the opposite coast of the peninsula of Nambu, the nearest point of which is distant five miles. From the south point of the West coast of Nambu to Cape Toriwisaki, the coast is nearly straight, a steep cliffy shore, with very deep water close to. The cliffs along this line are colored with the most brilliant and varied tints: like the entire coast of the Strait, they are of basaltic formation. Among the most remarkable are the "Red Cliffs" towering to the height of 1600 feet, and plainly visible on the opposite shore of the strait; they are 17 miles to the Southward of Cape Toriwisaki. Proceeding North, at the distance of eight miles South of Cape Toriwisaki, are two very remarkable pointed cliffs resembling horns, forming a double head, which I named "Double-head" accordingly. Nearly 2 miles SW. from Double-head is a rock 42 feet high, and North about three cables from this, is a rock awash at low water. Between Double-head and the low island off Cape Toriwisaki, the ground is generally foul over 10 fms. depth.

Cape Toriwisaki is a low tapering point, off which at the distance of a cable lies a small island elevated only 40 feet at its highest point; this I named "Low Island." The ground all round Low Island and Cape Toriwisaki is very foul, except to the NE., where a vessel may anchor to wait a tide in 13 fms., with the centre of Low I. bearing SW. by S. distant about a mile. This anchorage will be very useful to vessels approaching Hakodadi from the Eastward, particularly during the light Southwesterly winds common to the Straits during the summer months. There is a tide race near the full and change of the moon three miles North of Low Island, and with a NE. swell very heavy overfalls. On such occasions care ought to be taken to give this spot a berth.

There is a clear channel between the Race and Low Island. From Low Island to the Eastward, the coast is foul for about three miles; after which the shore may be approached closely. There is a remarkable red cliff, showing well to the Westward, $10\frac{1}{4}$ miles from Low Island. The land in this neighborhood may be further recognized by a high sharp bluff two miles to the Westward of the Red Cliff, and a high round bluff two miles to the Eastward. From the latter bluff the coast is very low to within four miles of Cape Nambu, where it rises to 1265 feet, and descends again towards the Cape in a gentle slope, making like an island at a distance. The Red Cliff is 15 miles from Cape Nambu: between these points there is good anchorage, but the best will be found on the Western side of the bay, just about off where the high and low land meets on the coast line, with the round bluff bearing W.N.W. 2 miles, in 15 fms.

Cape Nambu is in Lat. $41^{\circ} 26' 30''$ N., Long $141^{\circ} 29' 20''$. The land near it is about 70 feet high, and level for a mile, after which it rises with a regular

C. Esarne. C. Blunt. Hakodadi Head. C. Tsjuka. C. Nadjeda.

swell to the height of 1263 feet. Off the Cape, at the distance of three cables, there is a white rock 70 feet high and $\frac{1}{4}$ of a cable in diameter. There is also another rock, rather larger, two miles within the Cape, at a cable's length from the shore. The coast within four miles of the Cape is studded with rocks of minor dimensions, and the ground altogether foul.

Cape Esarne is in Lat. $41^{\circ}28'10''$ N., Long. $141^{\circ}12'30''$; it is a steep cliff of about 600 feet; the volcano immediately above the Cape is 1935 feet. The west side of this mountain is covered with patches of sulphur, having the appearance of snow at a distance. It was frequently capped with a light cloud of steam, but not otherwise active. A ship might anchor in the large bay about 2 miles W. of Cape Esarne, but further to the Westward. I should recommend using a stream or kedge when unable to make way against the tide. From Cape Esarne to Cone I. it is S. 57° W. $8\frac{1}{2}$ miles. Foul Point is $2\frac{1}{2}$ miles to the Eastward of Cone Island—it is low, and has a dangerous reef extending from it for the distance of two cables. The land in the immediate neighborhood of Cone Island is high and cliffy, and the approach very steep and safe; there is however a dangerous low point one mile to the Westward.

Cape Blunt is in Lat. $41^{\circ}42'40''$ N., Long. $140^{\circ}59'50''$ E.; from the Cape, Cone Island bears N. 86° E. $2\frac{1}{2}$ miles; Hakodadi Head N. 78° W. 12 miles, and Low Island S. 19° W. $9\frac{1}{2}$ miles (which is the narrowest part of the Strait). This Cape is very steep to, and the N.E. current frequently runs with greater force close to the rocks than out in the stream. The apex of the bluff immediately above the cape is elevated 1022 feet; from this spot the high land ranges in towards the Saddle Mountain. The coast for about seven miles to the Westward is a level plain of about an average elevation of 200 or 300 feet; beyond seven miles, it descends to the low beach connecting the high land of Hakodadi with the main.

The peak of the isolated mountain of Hakodadi is elevated 1131 feet above the sea level, and is in Lat. $41^{\circ}45'35''$ N., Long. $140^{\circ}44'9''$ E.; it is very steep and precipitous, and perfectly safe of approach: at a distance it appears like an island. Mussel Point is $4\frac{1}{2}$ miles due West from Hakodadi Head, the coast in the neighborhood is a uniform plain, elevated about 300 feet, rising gradually inland; the sea face cliffy, but generally covered with green scrubby bush, except in two places within the bay, where large white cliffs stand boldly out and form landmarks visible 15 miles (to the S.E.). There is a reef off Mussel Point extending nearly two cables; it is very steep to, and ought not be approached nearer than 2 cables. Cape Saraki lies S.W. $4\frac{1}{2}$ miles from Mussel Pt.; the coast between is very level, but fringed with rocks, and requires care in approaching. To the Westward of Saraki the coast is very low, with a sandy beach safe of approach, and clean ground for anchorage to within 3 miles of Cape Tsjuka.

Cape Tsjuka is in Lat. $41^{\circ}31'45''$ N., Long. $140^{\circ}27'10''$ E.; it bears S.S.W. 11 miles from Cape Saraki, and N. 56° E. 12 from Cape Nadjeda; it is a very high cliffy point, and may be further known by three rocks that run $\frac{1}{4}$ mile from a point situated one mile to the Eastward of it; the outer rock of the three is of a conical form and 70 feet high. The land to the Westward for four miles is high and cliffy; about half way between the Cape and the end of the cliffs there are two waterfalls. In the bight of the bay between Capes Tsjuka and Nadjeda vessels may stop a tide; but a southerly wind on the Western tide sends in a cross swell, for which reason I would not advise running far into the bight. A good anchoring position is in 15 to 20 fms., with the Southern white cliff bearing West about a mile.

Cape Nadjeda is in Lat. $41^{\circ}24'40''$ N., Long. $140^{\circ}14'30''$ E.—a high bluff similar to Cape Blunt, but not so safe of approach. The coast, for more than a mile on each side of the Cape, has numerous rocks (generally above water) fringing it, some of which run off to the distance of nearly two cables, but I am not aware of the existence of any dangers under water extending beyond the above distance. From Cape Nadjeda to Cape Matsumai it is N. 76° W. five miles. The bay between these points is very rocky, excepting off the East end of the city of Matsumai, where good anchorage will be found at the distance of half a

<i>Current in the Straits.</i>	<i>Tide.</i>	<i>Fogs.</i>	<i>Winds.</i>	<i>Vessels going West.</i>
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mile from the shore in 12 fms. This anchorage is of course unsafe in Southerly winds.

During the months of June, July, and August, I found a constant NE. current setting through the middle part of the Strait. The breadth of this current varied considerably according to the state of the wind and weather; before and during a NE. wind, its strength was much diminished, but with the wind from the opposite quarter, it would expand and fill up two-thirds of the entire channel against the strength of the Western tide. The tide in the stream runs about 12 hours each way near the full and change of the moon, and there are only two regular tides by the shore in 24 hours.

The flood or Eastern stream makes at Cape Sangar at 6.30 A.M., on full and change days; at 7 o'clock at Cape Tsjuka, and at 7.30 at Cape Toriwisaki. The Western stream commences about 12 hours later. The turn of the stream takes place 1½ hour later every day.

The prevailing winds during our stay were from the South, with much fine clear weather. We had the wind less frequently from the NW. than any other quarter. Dense fogs prevailed during the months of May and June; after that period they were comparatively rare.

The winds in shifting usually followed the course of the sun; after a few days of light Southerly wind and fine weather, it freshened and veered to the Westward, accompanied by fine clear and cold weather; at NW. it usually died away, or flew round suddenly to the Eastward; in the latter case it was always followed by a dense fog or a gale—the weather getting fine again as the wind veered to the Southward.

Vessels approaching the Straits of Sangar during foggy weather, should guard against being carried by the current to the Northward past the entrance. Should the weather be clear when nearing Cape Gamaley, it may be as well to sight it; but if doubtful, shape a course (allowing for the probable current) straight for Cape Greig. Should a fog come on suddenly when nearing the Cape, recollect that the coast is clear and sandy, and the soundings are regular to the Southward, but rocky and foul with irregular soundings to the Northward of it. The Cape itself is steep to, and standing out prominently from the coast line, forms the best landmark in the neighborhood. No particular directions are required in passing through this strait to the Eastward, as there are no hidden dangers, and the Northeasterly current will always be found strongest in the middle of the stream. A vessel bound to Hakodadi in thick weather, should, after passing Cape Sangar, endeavor to make Cape Tsjuka and proceed from thence to Mussel Point; or, giving Cape Tsjuka a berth, feel her way up into the bay between it and Cape Saraki by the lead, and anchor till the weather clears.

Approaching the Straits of Sangar from the Eastward, steer for Cape Nambu, and endeavor to make it on a NW. bearing. Do not pass the Cape at a great distance (a mile is sufficient), and after passing it, haul in a little to avoid the current, and you will be able to anchor should it fall calm. In this case, by keeping this shore close aboard, you may probably be able to drift up to Low Island (off C. Toriwisaki) with the Western stream, when the NE. current is running like a mill-stream in the middle of the channel.

At the anchorage off Low I., you must wait a favorable chance of getting across. During the summer months, the winds are frequently light from the Southwestward for a considerable period, and I have observed that it generally freshens a little when the Western stream makes—this is the right time to weigh. Pass half a mile or so off Low Island; and in crossing the current, take care not to be set to leeward of Hakodadi.

Proceeding from Hakodadi to the Westward against SW. winds, keep well inside Cape Tsjuka; and if unable to get round that point, anchor with the stream or kedge about two miles to the Eastward, getting under weigh again when the next Western tide makes. Should the wind be very light, one tide may not clear you of the strait; in this case it will be better to wait a tide to the Eastward of Cape Nadiejda, and take the whole of the following one to clear

Positions and Distances in Straits of Sangar. Asses' Ears Is. Pallas Rocks.

you of the strait, than run any risk of being swept into the Strait again by the current. Vessels passing through the Strait, particularly to the Westward, ought to have a good kedge and 150 fathoms of hawser ready for immediate use, and must hug the land closely.

Positions in the Straits of Sangar.

Latitude N.	Longitude E.	Latitude N.	Longitude E.
Cape Greig, ... 41° 8' 30"	140° 17' 30"	Hakodadi Peak, ... 41° 45' 35"	140° 44' 9"
Kosima Peak, ... 41° 22' 15"	139° 51' 33"	Kamida (Obs. spot) 41° 47' 3"	140° 45' 37"
Cape Sangar, ... 41° 16' 20"	140° 22' 45"	Low Island, ... 41° 33' 30"	140° 56' 20"
Cape Matsumai, 41° 25' 30"	140° 8' 00"	Cape Blunt, ... 41° 42' 40"	140° 59' 50"
Cape Tsjuka, ... 44° 31' 45"	140° 27' 10"	Cape Esarne, ... 41° 48' 10"	141° 12' 30"
Gun Cliff, ... 41° 14' 30"	140° 34' 45"	Cape Nambu, ... 41° 26' 30"	141° 29' 20"
Cape Nadiejda, 41° 24' 40"	140° 14' 30"		

Magnetic Bearings and Distances in the Straits of Sangar.

	Bearing	Distance.		Bearing	Distance.
Cape Greig to Kosima, -	N. 53° W. 23½	miles.	Cape Tsjuka to Hakodadi H.	N. 47° E. 17	miles.
C. Matsumai, -	N. 20° W. 18½		Cape Blunt to Hakodadi H.	N. 78° W. 11½	
C. Nadiejda, -	N. 6° W. 16		Low Island, -	S. 19° W. 9½	
C. Sangar, -	N. 31° E. 8½		C. Nambu, -	S. 51° E. 27½	
Cape Sangar to Kosima, -	N. 73° W. 23½		Cone Island, -	N. 86° E. 2½	
C. Nadiejda, -	N. 35° W. 10½		Cone Island to C. Esarne, -	N. 57° E. 8½	
C. Tsjuka, -	N. 17° E. 16½		Low I. to Hakodadi Head, -	N. 38° W. 44½	
Mussel Point, -	N. 25° E. 30½		C. Esarne, -	N. 43° E. 19	
Low Island, -	N. 58° E. 30½		C. Nambu, -	S. 71° E. 26½	
Gun Cliff, -	N. 74° E. 9½		Cape Nambu to C. Esarne, -	N. 27° W. 25	
Cape Nadiejda to Kosima, -	S. 85° W. 17		C. Blunt, -	N. 51° W. 27½	
C. Matsumai, -	N. 76° W. 5		Hakodadi Head, -	N. 59° W. 30½	
C. Tsjuka, -	N. 56° E. 12		Low Island, -	N. 71° W. 25½	
C. Tsjuka to Mussel Point	N. 35° E. 12½		Red Cliff, -	N. 81° W. 15½	

Directions for Asses' Ears Islands and Pallas Rocks.

By Lieut. John Richards, R. N.

The Asses Ears may be described as two small islands extending NE and SW., nearly 4 miles, but not more than a mile in extent NW. and SE. The NE. island is nearly 1½ mile long NE. and SW., by ¾ of a mile wide; it is elevated 600 feet, and nearly level at the top, with cliffy precipitous sides, excepting to the Southward, where there appears to be some shelter for fishing-junks, as several were observed at anchor. The SW. island is less than half the size of the NE. one, but 100 feet higher, and very craggy. Its remarkable peak most probably suggested the name of the group to its first discoverers. The intermediate small islands and rocks are high and cliffy, the latter partaking generally of the sugar-loaf form. The only "outlying" rocks noticed extend due South from the Southern island for about one-third of a mile, and may be almost considered part of the main group. The approach from the Northward is perfectly clear. Between the Asses' Ears and the Pallas Rocks, the ground seems pretty even, and the general depth is 81 fathoms. I made the peak of the Southern Asses' Ears to be in Lat. 32° 2' N., Long. 128° 25' E.

The Pallas Rocks are three in number; two lie close together, and one north-east, 1½ cable from the largest, which is also the Southwestern of the group. The largest does not exceed a third of a cable in diameter, and is about 60 feet high; the other two are about one-half that elevation. They are steep too; we got soundings at the distance of a mile due South of them in 95 fathoms—sand and shells. The largest rock is in Lat. 32° 14' 17" N., Long. 128° 13' 30" E.; variation 2.58 W. The peak of South Asses' Ear Island bears by compass S. 39° E. 15½ miles,—North extreme of NE. island S. 51° E. 15½ miles; the high land immediately above Cape Gotto just in sight N. 49° E. about 29 miles.

Entrance to Nagasaki. C. Nomo. Cape Seurote. Harbor has Three Parts.

Sailing Directions for Nagasaki Harbor,

By Admiral Krusenstern.

The entrance to Nagasaki lies in lat. $32^{\circ} 43' 45''$ N., and lon. $230^{\circ} 15' 0''$ W., in the middle of the Bay of Kiusiu, between Cape Nomo, and Cape Seurote. From Cape Goto, in lat. $32^{\circ} 34' 50''$, and lon. $231^{\circ} 16'$ W., the entrance to the harbor bears E. by N. 51 miles. The distance from the easternmost of the Goto Is. is under 33 miles, and less from a chain of small rocky islands, which stretch to the NE. from the Gotos, and probably join Cape Seurote, and seem, at this point, to render a passage impracticable; and which, according to the report of the Japanese, is only navigable for boats. Having ascertained the entrance, no doubt can exist as to the course to be steered; but should the want of an observation occasion any uncertainty, the mountainous nature of this part of the coast renders Nagasaki very remarkable. The land at Cape Nomo and Cape Seurote is not particularly high; but Nagasaki is surrounded by lofty mountains, among which is a chain higher than the rest at the southern extremity, which lies rather E. by S. of the entrance. It is best to keep as much as possible in the middle between the Goto Islands and Kiusiu, and to steer a NE. course until opposite the entrance, and then due East. In this direction the hill behind Nagasaki soon becomes visible. When within about 9 or 10 miles of the entrance, a large tree is seen on the S. of Iwo-sima; and this tree, which can be seen over 10 miles, being brought to bear S. 85° E., is then in a line with the point of the abovementioned hill. With these two marks it is impossible to miss the course; but if on making the land of Kiusiu you steer for Cape Nomo, and then along the coast, you are not only in danger (either in a calm, or by the tides, which at the full and new moon are very strong) of being driven near the rocks, but might very easily mistake an entrance in lat. $32^{\circ} 40'$ for the true one, and which, though it leads to Nagasaki, might prove dangerous, having never been explored.

Cape Nomo, in lat. $23^{\circ} 35' 10''$, and long. $230^{\circ} 17\frac{1}{2}'$ W., consists of a hill, with a split or double summit, and at a little distance has the appearance of an island; when near it is remarkable by a large rock in its front. Between Cape Nomo and the entrance into the harbor are a number of rocks and small rocky islands, one of which is of considerable height; and others, like the Papenberg in the Bay of Nagasaki are remarkable from being planted with trees from the base entirely up to the summit. Behind the islands and rocks is a bay, the South side of which is bounded mostly by a flat and very well cultivated country; farther inland it is more mountainous, the hills stretching in a NW. direction as far as Nagasaki, in large ranges adjoining each other, and planted with avenues and groups of trees. Behind Cape Nomo the coast assumes a SE. direction; and here there appears a large bay, which in the Japanese charts is called Arima, but which we were unable to examine. The last point seen by us is in lat. $30^{\circ} 32'$ N., and lon. $230^{\circ} 11'$ W.

Cape Seurote bears N. by W. of Cape Nomo, 25 miles, and from the entrance N. 30° W. $17\frac{1}{2}'$ miles, and is in lat. $32^{\circ} 58' 30''$, and lon. $230^{\circ} 25'$ W. The Cape itself is not very high, and may be known by a hollow to the SE., from which the land rises to the North, and is, on the whole, more mountainous than Nomo. Southward of Seurote are several islands, of which the largest and nearest to the cape is called Natsima; and the southern Kitsima.

The harbor of Nagasaki has three parts; it contains as many roads, all perfectly safe. The first is without, to the W. of Papenberg, the second in the middle to the eastward of that island; and the third, at the bottom of the harbor, in front of the city. The entrance is formed to the Southward by the north end of Iwo-sima, and to the northward by Cape Facunda; which two points lie NE. and SW. 40° distant about $2\frac{1}{2}$ miles from each other. In the middle between them the depth is 33 fathoms, a bottom of fine gray sand. In the direction of E. SE., E. SE. $\frac{1}{2}$ E., and East (the course of the outer road), it gradually decreases to 22 or 25 fathoms, over a bottom of thick green ooze, with fine sand. This

Iwo-sima. Papenberg I. Kamino-sima. Nedzumi-sima. Tow boats.

outer road, to the west of Papenberg, is completely sheltered from every wind except the NW. and W.NW.; but as this wind blows but seldom during the NE. monsoon, and never very strong, it is perfectly safe at this time of year. The anchorage is excellent, and we had difficulty in weighing the anchor after it had lain without strain for eight days, so that unless a vessel intends to remain here, it will be sufficient to cast out a kedge instead of a second sheet anchor. Ours lay to the North in a depth of 18 fathoms. This road is formed on the W. and SW. by the lofty island of Iwo-sima, which lies nearly North and South, and is $1\frac{1}{2}$ miles in length; the hill which forms it is divided in the middle by a low valley, where there are some houses, and upon the top of the northern half of the island a large isolated tree marks the entrance to the harbor. Nearly NE. from the tree is a valley with a considerable village, surrounded by trees, and in the same direction, about 2 cables from the shore, is a rock, which I believe is covered at high water. E.SE. of Iwo-sima is Taka-sima, divided by a channel not half a mile wide, and probably free from rocks. There is probably no passage between Kayak-sima and Taka-sima. North of Kayak-sima lie some rocks, called Kanda-sima; and farther to the NE., half a mile, the small Island of Amiabar, $1\frac{1}{2}$ miles in circumference. On its NE. point is a fort. The last islands surround the outer road from the SW. to the SE.; to the E. about 2 miles from the main land, to the NE. Papenberg, and the Island of Kamino-sima to the North. From these another chain of rocks stretches to the West, between which there does not appear to be a passage for the smallest craft.

The middle road East of Papenberg, is surrounded by land, and is as safe as the inner one, to which I should prefer it, as its anchorage is better. To the West lies Papenberg, a small island, under half a mile in circumference and the highest in harbor, and remarkable from a row of trees reaching from both shores to its summit. Its name Papenberg, is derived from the tradition that during the extirpation of the Christians from Japan, the Catholic priests were thrown from the top of this mountain. To the SW., lie the islands Amiabar, Kayak-sima, and Taka-sima; and in a rather more southerly direction, the channel out to sea, but in which, during the SW. storms, the waves are broken by small islands lying as well without it as within it; and on this account it is necessary to anchor nearer to Papenberg. Southward and eastward is the right bank of the channel leading to the city; to the NE., Nagasaki; to the N. and NW., a part of the left bank of the channel of Nagasaki, and the Island of Kamino-sima. From the outer road to the centre, the depth decreases gradually from 25 to 17 fathoms. In this passage keep closer to the Papenberg than to the opposite shore, and the former may be approached within a cable's length, a depth of 18 or 20 fathoms.

Northeast of Papenberg about three quarters of a mile, is a small flat wooded island, Nedzumi-sima (Rat Island), about the same size as Papenberg; and 130 fathoms further, in the same direction, is the small Bay of Kibatsch, in which there are from 6 to 10 fathoms water. This is the best place to refit a ship in all the harbor of Nagasaki, for in the inner one the shore is everywhere so muddy that no ship can approach it. It was on the left side of this little bay that we were allowed a small space, scarcely longer than the ship itself, surrounded with bamboos, as a walk.

Ships coming to Nagasaki should not suffer themselves to be detained by boats, but sail as far as the outer road, and even run at once into the middle any road, without the least danger, particularly during the southwest monsoon. The assistance of the Japanese in this passage is unnecessary, and by rejecting it they will avoid the unpleasant predicament of being kept two days in the middle of the entrance, when, if a blow were to come on they would be exposed to great danger. Unless this advice be adopted, they must hire a hundred boats to tow them to Papenberg, and they will experience the additional mortification of losing 100 fathoms of towing line, which the Japanese will cut off the moment they have carried them in.

Nagasaki Inner Harbor. Tides. Pellw's Directions for the Entrance.

From the middle to the inner road, or to the city of Nagasaki, the course lies N. 40° E.; the distance is about 2½ miles, and the depth decreases gradually from 18 to 5 fathoms. Nearly half way, where the channel is not more than 400 fathoms wide, are situated the imperial batteries, a number of buildings, but without cannon; similar batteries are erected along both shores. In the vicinity of the emperor's guard, on the right bank, there is a bay, which was always full of boats, and where there is no doubt plenty of water for large ships; on both sides of the channel there are several similar bays. This one, owing to its romantic appearance, was very striking, and seemed to be the largest.

The anchorage near Nagasaki is not so good as outside, as the bottom is a thin clay; besides, as the southwest channel is here open to the sea, there is less shelter than close under the Papenberg.

The mean of a great number of observations, taken during the stay of the *Nudiejda*, made the latitude of the flagstaff at Dezima to be 32° 44' 18", and of Nagasaki 32° 43' 40". The longitude of the centre of the town of Nagasaki was calculated from 1028 lunar distance by Dr. Horner and Capt. Krusenstern as 230° 7' 53", or, in round numbers 230° 8' W. The mean of the observations for the variation made it 1° 45' 36" W. The mean time of high water, full and change, was 7h 52' 41". The greatest range, April 2d, 1805, was 11 feet 5 inches; the lowest, March 25th, 1 foot 2 inches.

Directions for the Entrance to Nagasaki Harbor.

Abridged from Capt. Fleetwood Pellew, R. N.

Those who are unacquainted with Nagasaki Harbor should make the land to the northward in lat. 32° 47' N. or 32° 48', as the NE. trade wind blows here the greater part of the year. Having made the land in this latitude, you may run along the shore at 2 or 3 miles' distance, as it is steep and bold to approach, and by doing so it will be almost impossible to miss the harbor.

By making the land in lat. 32° 48' N., you will be about 3 miles to leeward of some islands of rugged aspect, one of which is perfectly barren, and formed like a sugar-loaf, and the largest of them forms a high ridge of rugged rocks; from hence to the island at the entrance of Nagasaki Bay, SE. about 9 or 10 miles, there is no danger. If close in with the shore, the southern extremity seen will be a high bluff point with some rocky islets off it; this point is about 7 miles to leeward of the entrance, and was mistaken by us for the East side of the entrance, and in steering for it the real entrance was discovered; care should be taken not to fall to leeward, as the fresh NE. winds render it difficult to beat back to the harbor.

On the bluff point last mentioned there is a watch house with a curious roof, and on a small island, about 3 miles to the northward of it there is another, situated lower down than the first; a third is on the middle of Cavallos, and here Dutch colors are displayed ships to coming in. Attention to these marks will prevent any mistake, and a further guide is a very high hill a long distance inland, having upon it a remarkable hump, the land of square form resembling a tower; this hill is directly over Nagasaki.

After rounding the point of Cavallos, Papenberg, and several small islands near it, which form the *inner entrance* of the harbor, will be plainly seen; also a reef called the Bone Roaster, close to the islands on the western side; these must all be left to starboard, and the mainland of Kiusiu must be borrowed on, steering direct for the rugged and rocky islet outside of which you may leave on the larboard hand, within half a cable's length. There are also some islets on the other side, that cannot easily be mistaken for those off Papenberg, which must all be left on the larboard hand, and those on the eastern side must be left to starboard, there being no passage within them. When round Papenburg, the town and harbor open to view; the latter turning suddenly to N.N.W. forms a deep and spacious bay. Papenberg is a high, round island, covered with trees, resembling the English fir; to the eastward, nearly opposite Papenburg, a small town will be seen in a walled enclosure.

*Lewchew Is. under Japanese rule.**American Compact of Napa.*

Section 4.

AMERICAN COMPACT WITH LEWCHEW.

DURING the American Expedition to Japan in 1853 and 1854, Commodore Perry visited Lewchew many times, and had much official intercourse with the authorities of the islands. This group is peopled by a race that have imitated the civilization of the Chinese, but who have adopted the language, and are now under the supervision of the Japanese, especially the Prince of Satsuma who lives in the south of Kiusiu, and with whom alone in Japan the Lewchewans are permitted to trade. They however acknowledge a partial fealty to the Chinese, and send a junk annually to Fuhchau with envoys and presents for Peking, and an assortment of goods to trade there; the government and merchants maintain a factory at that city. Japanese junks frequent the port, but no Chinese vessels or people come to trade. The authorities have always shown great reluctance to supply ships coming into the harbor with water and provisions, but whether it is owing to the restrictive policy of the Japanese, or to their own fears lest their power be weakened by permitting too much freedom to their own people, has not been ascertained. The island supply enough for the population, and export coarse cottons, grasscloth, saki or rice-whiskey, sugar, with a little millet and other grains, to Japan and China.

After he had completed his negotiations with the Japanese, Commodore Perry and the highest authorities of the islands agreed to certain stipulations respecting the future intercourse of Americans with the Lewchewans, which will at least form a basis for the conduct of the two parties. The islanders have so long maintained a seclusive policy, however, that practical experience of the good effects of more trade and intercourse, is the most likely way to induce them to relax in their laws.

Compact of Napa.

Hereafter, whenever citizens of the United States come to Lewchew, they shall be treated with great courtesy and friendship. Whatever articles these persons ask for, whether from the officers or people, which the country can furnish, shall be sold to them; nor shall the authorities interpose any prohibitory regulations to the people selling; and whatever either party may wish to buy, shall be exchanged at reasonable prices.

Whenever ships of the United States shall come into any harbor in Lewchew, they shall be supplied with wood and water at reasonable prices; but if they wish to get other articles, they shall be purchasable only at Napa.

If ships of the United States are wrecked on Great Lewchew, or on islands under the jurisdiction of the royal government of Lewchew, the local authorities shall dispatch persons to assist in saving life and property, and preserve what can be brought ashore, till the ships of that nation shall come to take away all that may have been saved; and the expenses incurred in rescuing these unfortunate persons shall be refunded by the nation they belong to.

<i>Pilots.</i>	<i>Supplies.</i>	<i>Official Purveyors.</i>	<i>Coins taken.</i>
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Whenever persons from ships of the United States come ashore in Lewchew, they shall be at liberty to ramble where they please, without hindrance, or having officials sent to follow them, or to spy what they do; but if they violently go into houses, or trifle with women, or force people to sell them things, or do other such like illegal acts, they shall be arrested by the local officers, but not maltreated, and shall be reported to the captain of the ship to which they belong, for punishment by him.

At Tumai is a burial-ground for the citizens of the United States, where their graves and tombs shall not be molested.

The Government of Lewchew shall appoint skillful pilots, who shall be on the lookout for ships appearing off the Island, and if one is seen coming towards Napa, they shall go out in good boats beyond the reefs to conduct her in to a secure anchorage, for which service the captain shall pay the pilot five dollars; and the same for going out of the harbor beyond the reefs.

Whenever ships anchor at Napa, the local authorities shall furnish them with wood at the rate of three thousand six hundred copper cash per thousand catties; and with water at the rate of six hundred copper cash, (43 cents) for one thousand catties, or six barrels full, each containing 30 American gallons.

Signed in the English and Chinese languages by Commodore MATTHEW C. PERRY, Commander-in-chief of the United States' Naval Forces in the East India, China and Japan seas, and special envoy to Japan, for the United States; and by SHO FU-FING, Superintendent of Affairs (*Tsu-li-kwan*) in Lewchew, and BA RIQ-SI, Treasurer of Lewchew at Shui, for the Government of Lewchew; and copies exchanged this 11th day of July, 1854, or the reign Hienfung, 4th year, 6th moon, 17th day, at the Town Hall of Napa.

Pigs, bullocks, poultry, coarse sugar, fish, eggs, greens, egg-plants, pulse, sweet potatoes, and rice, with water and wood, constitute the chief supplies which a ship can expect to get at Napa. The watering-place is about a mile up Junk River, and beyond the town of Napa, on the left hand of the river, and is easily reached at high water in a long-boat. No supplies can be bought in the markets of Napa, but they are furnished by official purveyors to such an extent as they see fit, and brought off to the vessel. The most eligible place for landing in rough weather is near Tumai, where the American Commodore had a coal dépôt built, but in ordinary times a landing can be made near False Capstan Point; it is the nearest to Napa, and there is a small boat passage through the reefs just north of it. The people are shy towards foreigners, not because they are afraid of them so much as of their own oppressive officials, who may punish them for too much intercourse.

The Mexican dollar is reckoned at 1440 copper Chinese cash, and is readily received. Gold is taken at par; both it and silver are much used in making hair-pins and other articles, and do not circulate as money, like the cash.



CHAPTER VI.

MONEYS, WEIGHTS, AND MEASURES IN CHINA, &c.

Section 1.

CHINESE CURRENCY.

THE only native coin now in use throughout China is the *tsien* 錢 or cash made from an alloy of copper, iron, and tutenague. Although worth less than the twelfth part of a cent, this coin is nevertheless much adulterated by forgers, and depreciated by the government: inferior descriptions of it also find their way into the southwest provinces in considerable quantities from Cochinchina, where tin and iron are almost the only ingredients used in its composition. The Chinese *cash* is circular, nine tenths of an inch in diameter, and has a square hole in the middle for the convenience of stringing them. It is cast, and not stamped or minted; the obverse bears the name of the province in which it is cast in Manchu, on the right side of the square hole, and the word 寶 for 寶 on the left; on the reverse is the name of the reign (as Táukwáng, Hienfung, &c.) in Chinese above and below the hole, with the addition of two cha-



racters 通寶 *tung páu*, i. e. 'current money,' on the right and left of it. Large coins of the same form have lately been issued from the Fuhkien mint, bearing the value of 10, 20, 50 and 100 cash respectively, but the people will not receive them at their nominal rate on account of their lightness.

The mode of casting cash is given in the Chinese Chrestomathy:

"From the Board of Revenue at Peking models are obtained, and in each provincial city a mint is established, over which a director is appointed. When the mint is to be worked, the director weighs out the proper quantity of copper, and delivers it to the workmen to be cast into money, and to be returned according to the quantity given; but these workmen often throw sand into the mold with the metal, and are thus enabled to purloin the copper. When about to cast, they take the metal and put it into a furnace to be fused, and afterwards pour it into a clay mold. Afterwards, when the metal has become cold and hard, it is turned out of the mold. The weight of each piece of the money is one mace (*tsien*), and hence it is called by the same name; the value fixed by government is the thousandth part of a tael's weight of silver.

<i>Casting cash.</i>	<i>No silver coin.</i>	<i>Nominal moneys.</i>	<i>Cash a base coin.</i>
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"The second, fifth, and eighth days of each month are the periods fixed for commencing the work; and the third, sixth, and ninth are the days for weighing the money, and delivering it to the commissioner of finance. The people who work the mint are required to be always in the establishment, not being at liberty to go in and out at pleasure; but they are changed in rotation; and, except on the third, sixth, and ninth days, after they have weighed and delivered the money over to the commissioner of finance, are they permitted to leave the mint, but are required to return on the same evening."—*Chinese Chrestomathy*, page 257.

Silver coins of various kinds have been in use in China at different periods, but none are now issued by the government; Spanish, Mexican, and South American dollars (though not acknowledged by the government) are employed as a commercial medium throughout the maritime provinces; but the habit of stamping them, practiced by bankers, shroffs, and merchants, as a pledge for their purity, soon takes from them one of the chief advantages of coined money—that of having a fixed and certain weight. As a commercial medium, therefore, the broken dollars in circulation, being always taken by weight, do not differ very materially from sycee silver. The only difference is that the former has a fixed, the latter an uncertain, standard of purity; and also the former being much thinner, dishonesty practiced with it does not requite the labor, and is more readily detected than when practiced with the solid ingots of the latter.

The *nominal moneys* are the 兩 *liang* 錢 *tsien*, 分 *fan* and 厘 *li*, called by foreigners *tael*, *mace*, *candareen* and *cash*, the proportion of which, one to the other, is decimal. The candareen is equal, *only in accounts*, to ten cash, but owing to the deterioration of these last, the actual value of a copper cash is about the eighteenth part of a candareen, 1900 ordinary cash or 1800 picked ones, being commonly paid for a tael. These terms—tael, mace, candareen and cash—are, properly speaking, denominations of weight, the cases in which stamped pieces of silver (other than uninjured dollars) pass current as coin, being few, except in the smallest transactions. It is more convenient, however, to speak of them as nominal moneys. In fact, usage has occasioned a slight difference (which is not however recognized by the Chinese,) between the *money* and the *commercial* tael, at the standards assigned by foreigners to each. At the money standard of 120 oz. 16 dwts. English troy weight for 100 taels, the pecul, which contains 1600 taels, should weigh 132 $\frac{5}{100}$ lbs. avoirdupois, while its actual standard is 133 $\frac{1}{2}$ lbs.; and it follows therefore, that while 3 taels' weight equal 4 lbs., 3 taels of money equal 84.16. Money is never reckoned above taels, and other articles are usually reckoned in decimals when under a tael. The difference appears to have arisen from motives of convenience with respect to turning Chinese into English weights and *vice versa*.

The *circulating medium* at Canton is, as has been mentioned, whole and broken dollars; the value of which in relation to the tael

<i>Rates of the Dollar.</i>	<i>Tael to Dollar.</i>	<i>Old Head and other Dollars.</i>
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varies in different transactions, according to long established usage.		
In <i>calculations</i> or <i>accounts</i> between foreigners and merchants, and almost always in bargains among the Chinese themselves, taels are converted into dollars at the rate of - <i>taels</i> 720 per \$1000		
Payments in <i>cash</i> are generally <i>weighed</i> at - „ 717 per 1000		
But payments for Bengal opium at - „ 718 per 1000		
Payments for Malwa or Turkey opium are at „ 717 per 1000		
Tradesmen generally, when paid by compradors,		
receive payments at - - - 715 to „ 717 per 1000		
Payments into the E. I. Co.'s treasury were at „ 718 per 1000		
At Macao, payments are usually at - - - 720 per 1000		

The value of the tael in relation to sterling money was reckoned in the books of the East India Company at 6s. 8d., but its intrinsic value varies according to the price paid for dollars per ounce in London. Hence, to convert taels into sterling money, multiply the price paid for dollars by the multiplier 1.208. Thus, if the price of the dollar be 60d. per ounce, the value of the tael will be $60 \times 1.208 = 72.48d.$; if at 66d., it will be $79.728d.$; and for any other price in the same proportion.

Dollars, even of the same weight and purity, are not received alike by the Chinese; thus, at Chusan and Ningpo, during the war with England, Republican dollars passed more freely than Spanish. But Spanish dollars, of certain coinages in the reign of Carlos III., called *old head Carolus dollars*, if uninjured by the practice of stamping, always bear a premium, rising latterly as high as 28 per cent.; while undefaced Ferdinand dollars are only a little above par. Chopped dollars are considered par. There is one kind of Spanish dollar bearing the stamp of the letter G, or G^a to denote their being coined at the Guadalajara mint, called by Chinese *kow tsien* 鉤錢 or 'hooked dollars,' from the resemblance of that letter, which are always received at a discount, sometimes as great as 5 per cent. They are now seldom seen. Republican dollars and rupees pass freely at Amoy and Canton since 1853, when the authorities at Canton agreed to take all coins in payment for duties at their real purity. The cause of the fastidiousness of the Chinese respecting certain coins is like that of the Turks and Arabs, and among all these nations may have been at first owing to the habit of receiving coins of a certain stamp from a uniform experience that such coin was always good, and of disliking to receive any other sort from ignorance of its purity; and this, through the influence of speculators in the difference of exchange among the sorts of coins tending to uphold this artificial premium and discount, has perhaps still further contributed to maintain the artificial distinction.

The following remarks, chiefly by H. M. Clark of the E. I. Co.'s Factory, on the Chinese currency, describe many particulars respecting the counterfeiting of dollars and other points relating to the currency of China.

*Government Money shops.**Refining silver.**Counterfeiting Dollars.*

"The dread of change, which has been generally considered as the leading characteristic feature in the domestic, as well as foreign, policy of China, has extended its full influence to the circulating medium of the country. The government is determined that its coffers, at least, shall suffer no defalcation by depreciation of the currency; and hence the imperial taxes and duties are required to be paid in pure silver. In every large town, are *yin tien* 'or money shops,' the inferior class of which are establishments of money-changers and shroffs; the more respectable are private banks. Of the latter class every officer, who has any superintendence of the revenue, employs one or more, to receive the taxes and duties, with a fixed allowance for loss in melting, and having reduced them to sycee silver, to become responsible for the purity thereof. The establishments which are thus connected with government are licensed, a privilege for which they have to pay, but not largely. They are remunerated by the surplus allowance or waste, which always exceeds what is necessary. Taxes are generally handed over to them by the governments; mercantile duties are paid into their banks by the merchants from whom they are owing, and the banker in such case gives the merchants a receipt for the amount, accompanied by a certificate that it shall be paid to government within a certain period. The refined silver is cast into ingots, and stamped with the names of the banker and the workmen, the year and district in which it is cast, and sometimes the kind of tax for which it was cast to pay. Should any deception be afterwards discovered, at whatever distance of time the refiner is liable to severe punishment.

"However wisely this system may have been contrived for the maintenance of the imperial resources, in a commercial point of view it is most burdensome and inconvenient. Since the establishment of foreign trade, the introduction of dollars has supplied the defect to a certain, though but very limited, extent; and so sensible did the native authorities appear to be of its advantages, that for a time the coinage of dollars in imitation thereof was allowed—nay even practiced under authority of a provincial treasurer. 'But,' says the *Yin Lun*, a Chinese treatise on money, 'though they commenced at a higher rate than the foreign dollars, in a short process of time they sank greatly below the standard, whilst the foreign money preserved its original degree of purity.' The manufacture of dollars is now disallowed by the laws; but, according to the common report of natives, is still carried on in spite of them to a very considerable extent. In the district of Shunteh, south of Canton, there is said to be a very large establishment, in which as many as a hundred workmen are frequently employed. Dollars are there manufactured of all gradations of value, some alloyed with lead, some made of base metal and coated over with silver, and others deteriorated by cutting out pieces of silver and filling up their places with lead, disguised by repeated stamps; this last method is frequently practiced with genuine Spanish dollars. These false coiners are said to possess European stamps, procured at great expense; but sometimes they attempt imitations, in which the omission or disfiguring of some letters easily betrays the deception to a European eye. So common however, are their dollars in circulation, that men from this district are most usually selected as shroffs, and there is a book in print for the use of the public, giving an account of the process of manufacturing each variety of false money, and rules for detecting the forgery. These rules are practically known by the shroffs, so that they can tell any description of dollars or degree of alloy at single glance. When the dollar is made of true value, the imitation is often very good, and detection is indeed difficult; yet the shroffs perceive the imitation and reject it. The profits of the concern in Shunteh are so large, that it can easily afford to quiet all interference on the part of the local officers.

*Chinese coined Dollars.**Coins worn as Charms.**Banks.*

"On the east coast of China, smooth faced dollars used to occur in large quantities, which were round pieces of unstamped silver of a dollar's value, mixed with other dollars worn smooth. The provincial treasurer in Fuhkien once issued a native dollar to some extent. The obverse bore a portrait of the god of Longevity, with an inscription showing that it was cast in the reign of Táukwáng, and by the treasury scales weighed 7 mace 2 cand., and was also *tsuh wan yin ping*, i. e. 'a cake of pure sycee silver.' The reverse exhibited a tripod, denoting that it was a government coin, and *Taiwan* in Manchu, to show that it was cast in Formosa. The workmanship of this coin was very rude.

"With regard to the cash, which is the only native coin now in circulation, the government have within the last few years taken strong measures to suppress the private manufacture of it, but in vain. The rapacity of the governors is strongly exemplified also in the gross adulteration of the public coin; that of Kángchi, about 150 years ago, or even than that of Kienlung, not more than 50 years since. It is debased in the coarsest manner with iron dust and sand (*tiéh shá*), and presents a gritty appearance to the eye.

"In China, as in Europe, coins and medals have attracted the attention of antiquarian collectors; and some of them offer subjects of interest to the curious. In the middle ages, they were valued as affording specimens of many ancient forms of characters, which in the times of feudal anarchy immediately preceding had been forgotten. Symbolical figures of birds and animals are those with which the medals are generally stamped. Coins are also strung together in different ways, and worn on the person, or suspended over beds, as charms, and sometimes as ornaments. This fancy does not appear peculiar to the Chinese. 'Many of the ancient coins found in Greece,' says Walpole, 'are pierced, and through the hole a string is passed, by which they are hung as ornaments round the heads of women and young girls. This custom is not new, we find it mentioned by Chrysostom, who particularly refers to the coins of Alexander.'"

A few remarks on the *banking* establishments above referred to, will not be irrelevant to the present subject. There are some bankers unconnected with ordinary mercantile business; but the majority are either agents, drawable at will, in which case no interest is allowed; or they take money at an interest not exceeding 12 per cent., in which case some days' notice must be given before any portion can be withdrawn. They do not appear to differ materially from similar establishments in Europe; but they are not chartered or privileged banking companies. Paper money was formerly issued by the government, but is not now known; its place is supplied at Fuhchau by the notes of local banks, which pass freely in the city and most parts of the prefecture. Their value rises from 300 cash up to \$50 and more. Promissory notes circulate with nearly the same facility as in Europe. Many of the Canton banks confine their transactions to this and the adjoining province of Kwangsi. Some have correspondents in one or two other provinces; and a few only have agents in all the provinces. The bank that possesses most credit in Canton is one named *Anshing*, the correspondence of which is principally with Peking and Nanking; with these places its intercourse is as regular, and perhaps more so, than that of the government.—There are in some places *banks of loan*, which advance

<i>Pawnbrokers.</i>	<i>Rules for redeeming Pledges.</i>	<i>Rates of Interest.</i>
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money for short periods, at a daily interest of about $\frac{1}{2}$ per cent., for periods of at least three days.

Nearly allied to these are the establishments of *pawnbrokers*, which are very numerous in China. The licensed ones are of three classes. Those which possess large capital and are licensed to grant loans to any amount, are placed under considerable restrictions; they allow three years to redeem, with a grace of three months. These have to pay largely for their licenses, and are also subject to an annual tax. They must give three years' notice of retiring. Inferior pawnbrokers are licensed to allow only two years to redeem. And others again, of a still lower description, may sell off the pawned articles after one year; but freemen are not permitted to open such establishments. Unlicensed pawnbrokers are liable to severe punishment. The length of time which they are compelled to allow for the redemption of pledges is very injurious to them, as the articles must often lose their entire value. If a pawnbroker suffer from theft or from fire originating in his own premises, he is not exonerated from the responsibility of repaying to the pawnee the value of the articles which he had in pawn. When fire is communicated to the pawnbroker's house from a neighbor's, he is required only to make good half the amount of loss. The highest legal rate of interest is three per cent. per month. In the winter months, it may not exceed two per cent. on raiment, so that the poor may be enabled more easily to redeem. The pawnbrokers issue tickets for the articles they take, which again have a certain value, and are hawked in the streets. These shops offer great temptations to thieves, who can immediately place their plunder on the shelves, and by hiding or destroying the tickets, prevent the right owners recovering their property. The statement which has been sometimes made respecting interest among the Chinese, that it is usually paid during only ten months of the year, appears to have originated in error. One or two months' freedom from paying interest is sometimes allowed, as a matter of favor, but we cannot learn that any rule exists on the subject.

On the subject of *interest*, the translator of the Chinese Penal Code has some correct remarks, in a note to those sections of Chinese law which come under the head of Usury. The exorbitance of the rate of interest upon which a contract for a pecuniary loan may be lawfully made, is a peculiarity in the Chinese laws which he considers it difficult to account for. It is not, however, to be understood that the ordinary rate of interest in China ever attains the legal limit. At Canton, for instance, the rate is generally considered to be from 10 to 15 per cent. per annum, rarely exceeding the latter amount. But on loans made on pledges, if a small amount, the legal rate is usually charged.

"In a state of things so unfavorable to the accumulation and transfer of property, there cannot at any time be much floating capital; and the value of that capital, as far as it is denoted by the interest which it bears, it is natural to expect, will be high in proportion to its scarcity. In other words, where

*Reasons for the high rate of legal Interest.**Ingots of sycee.*

there are many borrowers and few lenders, and where it forms no part of the system of the government to grant to the former any peculiar degree of protection or encouragement, it seems a necessary consequence, that the latter will both demand and obtain a more than ordinary compensation in return for the use of his property. Trade therefore, as far as it requires such aid, can not be so extensively carried on, as it is in those countries, in which there being more available capital, that capital is procurable at a cheaper rate, and accordingly a smaller return of profit found adequate to the charges of commercial adventurers."

"The rate of interest upon a pecuniary loan (quoting the words of the able translator) must, generally speaking, be influenced by a twofold consideration. Besides what is considered to be strictly equivalent to the advantage arising from the use of the money, the lender must be supposed in most cases, to receive likewise a certain compensation for the risk to which he exposes his principal. The former consideration will always be limited by, and bear a certain ratio to, the peculiar state and degree of the general prosperity; but the latter can evidently be determined by no rule or proportion, which does not include the consideration of the relative situation and circumstances of the parties interested in the transaction. In England, indeed, where the security of property, and the exclusive rights of individuals are so well understood, and so effectually protected by the laws, it may, in general, be almost as easy to guard against risk, as to compensate for it. But in China, where the laws connected with property are comparatively vague and undefined, and being distinct from the sources of power and influence, are less the law's regard; where, owing to the subdivision of property, there are few great capitalists; and where also there is but little individual confidence, except between relations, who, holding their patrimony in some degree in common, can scarcely be considered as borrowers or lenders in the eye of the law,—it is not so surprising that it should be deemed expedient to license in pecuniary transactions, the insertion of stipulations for very ample interest."

Gold and Silver formerly could not legally be exported from China, except in foreign coins, but by the Treaties treasure was made free of all duty. A large amount was, up to 1853, annually taken away, not only of broken dollars, but also of sycee silver. The most common weight of the ingots is ten taels each; their shape resembles a parallelogram, smooth and flat on the upper, but rather rough and rounded on the lower surface, and bearing a slight resemblance to a Chinese shoe, from whence they are called *shoes* by foreigners. Gold leaf is also used in payments not under \$40 or \$50, being both a portable medium of conveyance, and very secure from fraud.

It appears from a memorial addressed to the emperor in 1838, that most of the native silver is obtained from mines at Hoshán in Yunnan in the department of Tsiángchau, and at Sungsing on the borders of CochinChina. These mines are farmed out by the government to overseers, and between forty and fifty thousand workmen are employed in them, who annually produce not far from two millions of taels of silver. There are other mines in the empire, not so rich as these two, though probably more productive in the aggregate; but it is impossible to even guess what China receives annually from her gold and silver mines.

The *fineness* of gold and silver is expressed by dividing the metal into a hundred parts called *touches*. Thus, if an ingot be said to be

Mines. Fineness of Bullion. Table of Weights. Numerals.

at 95 touch, it is understood to contain 5 parts of alloy, and 95 parts of pure metal. The fineness of the metals, as thus expressed, may be converted into English proportions by the following analogies. If gold, for instance, be at 91.66 touch, say as 100 : 91.66 :: 12 : 11, the standard, and *vice versâ*; and to convert standard silver into touch, say as 240 : 222 :: 100 : 92.5, the touch of sterling silver.

COMPARATIVE TABLE OF CHINESE WEIGHTS.

<i>Pecul.</i>	<i>Catties.</i>	<i>Taels.</i>	<i>Mace.</i>	<i>Cand.</i>	<i>Cash.</i>	<i>Lbs. avr.</i>	<i>Grs. Troy</i>
1	100	1600	16,000	160,000	1,600,000	133½	—
	1	160	160	1,000	16,000	1½	—
		1	10	100	1,000	oz. 1½	579.84
			1	10	100		57.984
				1	10		5.7984

Section 2.

CHINESE NUMERALS.

The numerals of the Chinese in the complex, simple, and contracted forms, with their pronunciation in the court, Canton, and Amoy dialects, are as follows:—

<i>Complex form.</i>	<i>Common.</i>	<i>Contracted form.</i>	<i>Court.</i>	<i>Canton.</i>	<i>Amoy read.</i>	<i>Amoy pronounced.</i>
1 壹	一	丨	yih	yat	yit	chít.
2 貳	二	|| or 二	'rh	í	jí	no.
3 叁	三	||| or 三	sán	sám	sám	s ⁿ á.
4 肆	四	ㄨ	sz'	sz'	sú	sí.
5 伍	五	ㄥ	wú	'ng	ngou	góe
6 陸	六	ㄥ	luh	luk	liok	lák
7 柒	七	ㄥ	ts'ih	ts'at	ch'it	ch'it.
8 捌	八	ㄥ	páh	pát	pát	pèh.
9 玖	九	ㄥ	kiú	kau	kiù	kiú.
10 拾	十	卅	shih	shap	sip	cháp.
100	百		peh	pák	pek	pèh.
1000	千		ts'ien	ts'in	ch'in	ch'eng
10,000	萬		wán	mán	bán	bán.

Cypher.	Decimals.	Dimes and Cents.	Abacus or Counting-board.
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The Chinese, like the ancient Greeks, do not reckon above a myriad, but they have, through the Budhists, learned to use a few characters for the higher numbers, as *yih* 億 for 100,000; *ch'u* 兆 for 1,000,000; *king* 京, 10,000,000 垓 *hái*; for 100,000,000, &c. There are higher terms than these, but numbers above a myriad are usually expressed by uniting those below it, as *peh wán ling ling sán tsien yih peh luh-shih-wú* 百萬零〇三千一百六十五 or 1,003,165; 零 or 〇 is used to denote a cypher. Twenty is also written 廿 and 廿 *jih*, and 30 卅 *sán*, which are merely 十 combined twice and thrice; but the common way to express all numbers above ten is by combining the digits, as *shih-yih* 11; *shih-'rh* 12; *'rh-shih* 20; *'rh-shih-yih* 21; *yih peh ling luh* 106; &c.

The decimals are not called tenths, hundredths, &c., as in the Arabic notation, but each progressive term has a separate name. The five first are the *fan* 分 a tenth; *li* 厘 a hundredth; *háu* 毫 a thousandth; *sz'* 絲 a ten thousandth; *hwuh* 忽 a hundred thousandth, &c.

In money accounts, the *háu* is used for dimes or tenths of a dollar, and *sz'* or *sin-sz'* in imitation of the word *cents*; as *sán ko yin tsien, sz' háu yih sz'* 三個銀錢四毫一絲 is \$3 41. This has arisen probably, from the confusion which would ensue if *fan* and *li* were used, they being the names of moneys.

The Chinese use a kind of abacus, called *swán pán* 算板 or 'counting board.' It consists of a shallow wooden box or frame, divided in two unequal compartments, by a bar running lengthwise. Through this bar at right angles are inserted a number of parallel wires, usually seventeen but sometimes more; and on each wire are movable balls, in the lower compartment five, and two in the upper. The principle on which computations are made is:—that a single ball in the lower compartment, being placed against the bar and called a unit, is increased towards the left, or decreased towards the right, by tens, hundreds, &c. A ball in the upper division denotes a value five times that of any ball opposite to it in the lower compartment; thus, if opposite to a unit, it denotes five; if to ten, fifty; and so also, if opposite to a hundredth part, it denotes $\frac{5}{100}$ th parts. The machine is an imperfect mode of reckoning, and serves rather to assist the mental operation; consequently, if the result is erroneous, the sum must be reckoned over again.

In noting down calculations, the Chinese follow the order of the balls on the abacus, and accordingly place the numerals after each other from left to right in the same order and method as those do who employ the Arabic numerals. For this purpose the contracted forms of figures are used.—Thus, 卅三〇九 denotes 2309, the character for *thousand* being placed under the first figure, so that it may be read off at once without difficulty.

Different Weights. Balances. Steelyards. Money yards. Various Peculs.

Section 3.

CHINESE WEIGHTS.

- 1 kernel of millet (一粒黍) is one 黍 *shú*;
 10 *shú* 黍 or kernels make one 釁 *lui*;
 10 *lui* 釁 make one 銖 *chú*;
 24 *chú* 銖 make one *tael* 兩 *liáng*; = 1½ oz. av.
 16 taels make one *catty* 斤 *kin*; = 1½ lb. av.
 2 catties make one 引 *yin*; = 2½ lbs. av.
 30 catties make one 鈞 *kiun*; = 40 lbs. av.
 100 catties make one *pecul* 擔 *tán* (lit. a load); = 133½ lbs. av.
 120 catties make one *stone* 石 *shih*.

The first three of these denominations, with the *yin*, *kiun*, and *shih*, are nominal. Instead of the first three, the decimals given in the preceding section are used for less weights than a tael, and generally whenever a fractional number is to be expressed. At Fuh-chau a *pecul* is 100 lbs. av.; at other places a *shih* of 120 catties is called a *pecul*.

In China, most articles are sold by weight, not excepting liquids, wood, silk, cloth, grain, and live stock. Grain is however retailed by measure. The minor decimal weights are used in weighing bul- lion, pearls, precious stones, valuable drugs, &c. There are three instruments for weighing, viz., the balances, steel-yards, and money scales. Balances are used for weighing large sums of money; stan- dard weights are furnished by the Board of Revenue at Peking, from 100 taels down to one cash, made of brass. The steelyard is made of wood, marked off into catties, mace, &c.; the largest of them will weigh two or three peculs; it is called *dotchin* by foreigners, a word corrupted from *toh-ching* 度秤, to weigh. The counterpoise of the small common steelyards is usually a piece of stone. The money yard, called *li tang* 釐戥 is a small ivory yard like the *dotchin*, used to weigh money, drugs, pearls, and small things, up to two taels' weight.

At Macao, the *pecul* is distinguished by the Portuguese into three kinds, viz., the *pecul balança* or common *pecul*, by which cotton, and valuable goods are sold; the *pecul seda* of 111⅔ catties or 148½ lbs. by which alum, pepper, and coarse goods are sold; and the *pecul chapa* of 150 catties or 200 lbs., by which rice is sold. In the sale of paddy, one third is allowed for the trouble and diminution in weight which attend the taking off the husk, or which is the same thing, paddy is sold at two thirds the price of the same weight of rice.

Measures. Three sorts of pecks or tau. Measures for Oil and Spirits

There have been different valuations of the pecul, arising from the different estimates put upon the tael, but the standard weight now is 133½ *lbs. avoir.*, equal to 60 kilogrammes 474 grammes. In marketing at Canton, the catty weighs from 14 up to 15½ taels, according to the article, seldom coming up to a full catty. The range given for the pecul by various authors is from 133½ *lbs.* to 114.06 *lbs.* and 126.04 *lbs.*, the last two are in use at Peking. At Amoy, brown sugar is sold by the pecul of 94 catties, sugar candy at 95 catties, indigo at 110 catties, and rice at 140 catties, but in foreign commerce these variations are not acknowledged.

Section 4.

CHINESE MEASURES OF CAPACITY.

- 1 grain of millet (*yih lih suh* 一粒粟) is a 栗 *suh* ;
 6 *suh* 栗 make one 圭 *kwei* ;
 10 *kwei* 圭 make one 撮 *tsoh*, or pugil ;
 10 *tsoh* 撮 make one 抄 *cháu*, or handful ;
 10 *cháu* 抄 make one 勺 *choh*, or ladle ;
 5 *choh* 勺 make one 龠 *yoh*, or cup ;
 2 *yoh* 龠 make one 合 *koh*, or gill ;
 10 *koh* 合 make one 升 *shing*, or pint ; = 31.6 cubic *tsun*.
 10 *shing* 升 make one 斗 *tau*, or peck ; = 316 " "
 5 *tau* 斗 make one 斛 *hoh* ; = 1580 " "
 2 *hoh* 斛 make one 石 *shih* ; = 3160 " "
 1 *fú* 釜 is equal to 6 *tau* 4 *shing* ;
 1 *yü* 庾 is equal to 16 *tau* ;
 1 *ping* 秉 is equal to 16 *hoh*.

There are only four of these fourteen measures actually in use, the others are now entirely nominal ; these four, which are used in retailing rice and other grains, are the *koh*, the half *shing*, the whole *shing*, and the *tau*. The first three are made of the joints of the bamboo. The *tau* is made of wood, and shaped like the frustrum of a pyramid, with a handle across the top ; it is of two sizes ; one, called *shí tau* 'the market peck,' or *shih kin tau*, '10 catty peck,' holds just ten catties of dry rice, and measures 316 cubic *tsun* according to government measure. The *shih* in this proportion is just a pecul. But the common one, called *tsáng tau*, 'granary peck,' holds only 6½ catties, and measures 309.57148 inches, or nearly 1.13 gallon. The common *shing* contains 30.43415 cubic inches, or a trifle less than

<i>Long Measures.</i>	<i>Different chih or covids.</i>	<i>Measures of Distances.</i>
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a pint, but this and the two smaller measures, owing to the inaccuracy of the bamboo, are not always uniform in their capacity.

Measures are used for selling spirits and oil, which contain a certain weight and not quantity; there are four in common use, containing one, two, four, and eight taels respectively. Coarse jars are also made, holding 15, 30 and 60 catties of these liquids, so uniform in size that the contents are bought by the jar, and not weighed. Timber is not sold by measurement; fine woods are sold by weight, and common lumber by the stick.

Section 5.

CHINESE MEASURES OF LENGTH.

Like the people of all other countries, the Chinese have had great trouble and perplexity in fixing a standard of weights and measures. A certain number of kernels of grain—whether disposed lengthwise or crosswise is uncertain—was taken as a starting point for the measures of length.

1 <i>lih</i>	粒	grain is one	分	<i>fan</i> ;
10 <i>fan</i>	分	make one	寸	<i>tsun</i> , or punto; nearly $1\frac{1}{2}$ in.
10 <i>tsun</i>	寸	make one	尺	<i>chih</i> , foot or coid;
10 <i>chih</i>	尺	make one	丈	<i>cháng</i> ;
10 <i>cháng</i>	丈	make one	引	<i>yin</i> .

The *chih* (cubit, coid, or Chinese foot) fixed by the Mathematical Board at Peking is 13.125 English inches; that used by tradesmen at Canton varies from 14.625 to 14.81 inches; that employed by the engineers of public works is 12.7 inches, and that by which distance is usually measured is 12.1 nearly. At Canton, an English yard or *má* is reckoned at 2 *chih* 4 *tsun*, which makes the English foot equal to 8 *tsun*. The *chih* is reckoned in the tariff at 14.1 English inches, which is about the average length of this measure in Canton; this rate makes the *cháng* to be 141 inches, or $3\frac{1}{2}$ yds.; the usual length of a *cháng* in Canton is a very little over 4 yds., though some of them are but little over 11 feet. The foot-rule of tailors is called *pái tsien chih*, and the shorter one of masons *chau tung chih*. The *cháng* varies according to the *chih*.

The terms used in measuring long distances are:—

Half a <i>tsun</i>	寸	makes one	厘	<i>li</i> ;
5 <i>tsun</i>	寸	make one	分	<i>fan</i> ;
5 <i>chih</i>	尺	or feet make one	步	<i>pú</i> , or pace;
360 <i>pú</i>	步	or paces make one	里	<i>li</i> , or mile;
250 <i>li</i>	里	or miles make one	度	<i>tú</i> , or degree.

*The Chinese li or mile.**The mau or acre.**Japanese coins.*

Formerly, $192\frac{1}{2}$ *li* were reckoned to a degree, which makes the length of the *li* $1897\frac{1}{2}$ English feet, or 2.78 *li* to a mile. But the European mathematicians at the capital, deviating from their predecessors, divided the degree into 250 *li*, or 1460.44 *ft.*, intending to make it exactly one tenth of a French league, probably the French astronomical league, which is $\frac{1}{25}$ of a degree. The degree is subdivided into 60 分 or minutes, and each *fan* into 60 秒 *miáu* or seconds. The old estimate of the *li* makes a *chih* 12.054 inches, a little less than that commonly regarded as the rate in measuring distances.

Section 6.

CHINESE LAND MEASURE.

5 <i>chih</i>	尺	make one	步 <i>pú</i> (pace), or 弓 <i>kung</i> (bow).
24 <i>pú</i>	步	make one	分 <i>fan</i> ;
60 <i>pú</i>	步	make one	角 <i>kioh</i> , or horn;
4 <i>kioh</i>	角	or 240 <i>pú</i> , make one	畝 <i>mau</i> , or Chinese acre;
100 <i>mau</i>	畝	make one	頃 <i>k'ing</i> .

Taking the *chih* to be 12.587 inches, a square *pú* will measure 27.499636 square inches; this divided by 9, gives 3.0555 square yards; which multiplied by 240 *pú* gives 733.32 *sq. yds.* in a Chinese *mau*, equal to 6.61 *mau* to an English acre. But the Chinese always estimate land by the *k'ing* and *mau*, below which they reckon in decimals. The *mau* anciently contained 100 square *pú* instead of 240, but whether it was then larger or smaller than at present is uncertain; it now contains 6000 square *chih*, or 6599.88 square feet (others reckon it 8942.6 *sq. ft.*); a *k'ing* contains 15.13 square acres. The land tax is reckoned about 2 mace the *mau*.

Section 7.

JAPANESE MONEYS, &c.

The *coins* of the Japanese are made of gold, silver and copper, and debased a little; most of them are well made pieces, though all of them are cast like the Chinese, and not minted. Accounts are kept in *rio* taels, *momme* mace, and *bu* candareens, which have the same relative value as in China. Gold and silver pieces of certain denominations, and ancient coins, are weighed among merchants, the only coins which have a certain standard of value being those of the imperial coinage, which have the imperial coat of arms, a flower and three leaves of the *kiri* or Dryandra, upon the face.

The Japanese coins are of various shapes. In a native work on numismatology they are represented as circular, square, or rectan-

Japanese gold coins.

Three sorts of copper coins.

Silver *ichibu*.

gular like pieces of Indian ink, thin and elliptical, and also in unshapen lumps; most of these, however, are drawings of old coins not now in use. The gold kobangs are thin and elliptical. They are two, the *obang* 大判 and the *kobang* or *kopang* 小判; the first is nearly as large as the palm of the hand, and both are about the thickness of an English farthing. The *kobang*—which has the nominal value of a tael of gold, and is the tenth part of an *obang*—is about two inches long, and rather more than an inch wide; it should weigh 3 *mace*, 5 *cand.* or 203 grs. troy. These pieces are marked on one side with short parallel lines, and on both sides with several stamps. The older coins are thicker, and more valuable than the new ones, but are not in general circulation. At Batavia

The old *kobang* weighs 275 grs. troy, and is said to be 22 carats fine.

The new *kobang* weighs 180 grs. troy, and is about 16, „ „

The old *kobang* is then worth 44s. 7d. sterling; it passes for 10 rix dollars.

The new *kobang* is worth 21s. 3d. „ „ and passes for 6 „ „

The following remarks upon the Japanese currency were drawn up by one connected with Commodore Perry's Expedition, and explain the singular valuation the Japanese government puts upon bullion and coin:—

The integer of Japanese currency is the *toō-hiaku* 當白 an oval-shaped copper piece, about the size and shape of an egg cut longitudinally, which is reckoned, as its name imports, at 100 *zheni* or cash. The cash is like the common Chinese *tsien* or cash in size, but is rather thinner, and has more iron in its composition. There is another copper coin, purer, larger, and better made, called *shi-mon zheni*, 四文錢 or four-cash *zheni*, worth, as its name imports, four of the smallest coins. The relative value of these three copper coins is 1, 4, 100, but their relative weight is only about .077, .13, and .56, being these fractions of a tael. The enormous difference between a coin rated at 100 times the value of another, and weighing only seven times as much, has of course thrown the latter out of circulation. The *toō-hiaku*, so far as we know, was first coined in the reign Tenpo, about twenty years ago, and its arbitrary valuation has raised the price of provisions and labor to correspond to its lesser real value, while its convenience over the other two kinds of cash has also made it more popular.

Most of the silver in circulation is a coin called the *ichi-bu*, 一分 which means "one quarter," as its weight is one-fourth of a tael. When the ore is smelted, and the pure silver is brought to the Government, it is bought, or reckoned at a bullion value of 225 *candareens* to a tael, instead of 100 *candareens*, its actual weight; and when the metal is sold for purposes of art or luxury, it is purchased by the people from the Government at the same rate. But, when coined, the Government places an arbitrary valuation of 640 *candareens* on the tael, or 160 on the *ichi-bu*, when compared with the copper currency, it being reckoned at 1600 copper cash, or 16 *toō-hiaku*. By this arrangement the Government makes a profit of nearly 300 per cent. on every *ichi-bu* issued; if the metal is extracted from the mines by paid agents, it probably stands the mint in more than this, as there must be every inducement to make it cost all they can get. Gold is also taken by the mint at one rate and issued at another, but the disparity is much less than with silver. A tael's weight of gold bullion is reckoned at 19 taels in silver currency, and

*Disparity between bullion and coin.**Proportion of gold to silver.*

the same weight of coined gold at 23½ taels. The gold *ichibu* is reckoned at 16 *toō-hiaku*, the same value as the silver one; but most of this metal is coined into thin oval pieces, called *koban*, worth 1, 5, and 20 taels. There are, besides these, a gold and silver coin, called *ni-shiu*, 二朱 worth half an *ichibu* or 8 *toō-hiaku*, and a small silver piece, an *is-shiu*, 一朱 worth 4 *toō-hiaku*.

The Japanese Government has decided to take the dollar at its value compared with bullion, and not with current coin, asserting that it must be reckoned into *ichibu* before it can be circulated. A dollar weighs 71.2 candareens, which, at the proportion of 225 candareens for a tael's weight of silver, makes it worth 160 candareens, or the same as a silver *ichibu*. The last is reckoned, in the copper currency, at 16 *toō-hiaku*, while the dollar weighs just three times as much as an *ichibu*, and is worth actually 48 *toō-hiaku*, though the Japanese will only receive it at the bullion value of 16. It is by this depreciation of the dollar, instead of levying an export duty like the Chinese, or charging a moderate custom-house fee on goods, and allowing specie to be taken at its proper value, that the Japanese design to derive their profit from the trade. The American gold dollar is by them reckoned at 4.4 candareens, or 836 cash—the twentieth part of a \$20 gold piece of 88 candareens' weight. This valuation, compared with silver, makes a gold dollar worth 52½ cents in silver; and even when actually weighed against Japanese gold coin, supposed to be of equal purity, it is worth only 1045 cash, or 65½ cents. From this it appears that their own gold, when compared with their own silver coin, is worth about 5 to 1, while silver and gold in all western markets are as 16 to 1. But if a foreigner pays out gold coins for goods, he cannot expect the Japanese to put any higher valuation on them than they do on their own; and the depreciation for a gold dollar from 1045 (its real value) to 836 cash (its estimated value,) is, therefore, very small, compared with that of a silver dollar from 4800 to 1600 cash. No one will wonder then that the Japanese Government intends to retain its specie within its own limits; for, at this rate, all the gold in the country would be immediately bought up for exportation. In practice, by the present arrangement, a gold dollar is worth only 17½ cents of copper, and in reality, its value among the people is only 22 cents; consequently, when it is found that a \$20 gold piece is reduced to \$3.55 by going across the Pacific from San Francisco to Simoda, only a small portion of the depreciation is chargeable to the Japanese rulers. Nor is it surprising to learn that gold is chiefly used for luxury and ornaments—the delicate mountings on the sabres and daggers of the gentry being of this metal, and that large quantities of gold leaf are used for gilding. This singular cheapness of gold could only exist in a secluded country like Japan, and where the mines produce much more of it than they do of silver.

Taking the silver *ichibu* as worth 1600 cash, and one-third of a dollar, the Japanese copper coin—the *toō-hiaku*—is really worth .02083 of a dollar, or a little over two American cents; it weighs a little less; consequently, silver and copper bear about the same proportion among them as in the United States; and it is not until we compare the value of a silver dollar there at 4800 cash, with the value it bears in China, of from 1400 to 1700 cash, and the still greater discrepancy between the copper *zheni* and the *toō-hiaku*, as stated above, that the extraordinary features of the currency of Japan can be understood. Further investigations are still wanted to ascertain how much bread, clothes, and labor, can be obtained for an *ichibu*, before the comparison of the currency of Japan with that of China, England, or America, is perfectly satisfactory.

Japanese copper, silver, and gold coins.

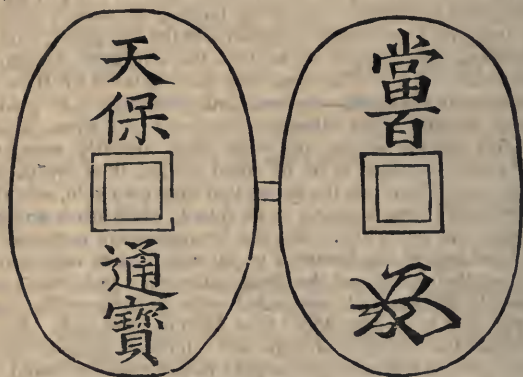
Their relative values.

The names and relative values of the coins most commonly used are as follows:—

A copper cash called 一文錢 *ichi mon zheni*, 100 make a *toö-hiaku* but 6800 can be procured for a tael of silver. This coin is cast everywhere, and sometimes much adulterated. In the principality of Shendai, cash are cast so brittle that they break by a fall on the stones. The use of this small cash has latterly diminished.

A large copper cash, called 大錢 *oho zheni*, and 四文錢 *shi-mon zheni*; 24 make a *toö-hiaku*.

An oval copper cash, called 當百 *toö-hiaku*, 64 are equal to a tael of silver.



SIZE AND DEVICE OF THE JAPANESE COPPER TOÖ-HIAKU.

An oblong silver coin, half an inch long, called 一朱 *isshiu*, worth 4 *toö-hiaku*.

A gold and silver coin called 二朱 *ni-shiu*, worth 8 *toö-hiaku* or $\frac{1}{8}$ of a tael; it weighs the same as an American gold dollar, and is worth 17 cents.

A silver coin called 一分 *ichibu*, or *ichibu gin*, worth 16 *toö-hiaku*, and weighing $\frac{1}{4}$ of a tael. The *nibu*, worth half a tael, is not much used now.

A gold coin of the same value, called *ichibu kin*, about one fourth the size.

A thin oval gold coin called 小判 *koban*, worth one tael of four *ichibu*, or 6400 cash.

The large gold *koban* worth 5 taels, and the *obang* worth 30 taels of silver.

1000 cash make an 一貫 *ikkan* or string; this is a nominal money and worth about 9 mace of silver; 120 cash are usually reckoned to a mace, but the exchange varies. Besides these there is

Japanese Weights, Measures and Miles. Cochinchinese gold and silver coins

the *ita-gane* 板金 or 'money slips,' of both gold and silver; and the *小玉* *kodama* or 'little pearls,' made in Satzuma, both of which are of uncertain weight and stamped in evidence their purity. They are seldom seen.

The *weights* in Japan are the same as in China, both in relation one to the other, and in relation to European weights,—the *pecul* here being generally accounted equal to $133\frac{1}{2}$ *lbs.* avoirdupois, or 125 Dutch pounds; it is said however only to weigh 130 *lbs.* av.; a *catty* (*ikkin*) is 160 *me* or mace, and 1000 *me* is a *kan*, or $6\frac{1}{4}$ catties; a *pecul* is called *hiakkin*; 1250 catties make one *koku*, in which revenues are rated.

The *measures of length* and of *capacity* are of the same relative proportions as in China; there is likewise a measure called *go shiaku záu* which is 5 Chinese couds, or half a *chang*; there is also a carpenter's ell of 6 *chi* called *ken-záu*, used in building; rough timber is purchased by the *yama ken záu* of 6 *chi* 3 *tsun*; the *kane* or rule of 8 *puntos* is employed in measuring cloth; and the *kuzhira* of 10 *puntos* in measuring wood. The Japanese *ri*, or mile, varies in length; the common estimate makes it $2\frac{2}{3}$ English miles.

Section 8.

COCHINCHINESE MONEYS, &c.

THE *coins* of Cochinchina are gold and silver taels, the former being usually fourteen or fifteen times the value of the latter,—and the cash, which are called by the natives *dong*, and shaped like the Chinese, are made of pure zinc. The precious metals are scarce among the people, and most transactions are carried on in cash, which is very inconvenient owing to its brittleness and great weight.

The gold and silver used by the Cochinchinese is generally refined, but sometimes much alloyed. The golden ingot, or *loaf* as it is called, is the largest; there is a half ingot of gold of the same shape, of 5 taels' weight, worth 277 rupees, or about 693 *fr.* 40 *cent.* The *dinh vang*, or golden nail, weighs one tael, and is worth 138 *fr.* or 53 $\frac{1}{2}$ rupees. A silver ingot of the same form as the *loaf*, called *nen bac*, weighs 10 taels; it is an oblong piece of silver, worth 32 Co.'s rupees, or \$14, or 81 *fr.* 57 *cent.* There is another piece of silver money, called *dinh bac*, or nail, weighing one tael, worth about 8 *fr.* 15 *cent.*, or 3 $\frac{1}{4}$ rupees; this has its subdivisive halves and quarters; the half is called *nua dinh bac*; the golden *loaf* of 10 or 5 taels equals \$238 or \$119; the golden *dinh vang* of 1, $\frac{1}{2}$ or $\frac{1}{4}$ tael weight, equals \$24, \$12 or \$6; the silver *dinh bac* of 1, $\frac{1}{2}$ or $\frac{1}{4}$ tael weight, equals \$1.40, \$0.70 or \$0.35.

Besides these more strictly native coins, the late king Minh-menh issued a coinage of dollars, the pieces of which were intended to

Cash.	Cochinchinese Weights.	Land Measures.	Long Measures.
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be of the same weight as the Spanish dollar ; but in general it is not worth more than $1\frac{2}{3}$ of a rupee (4 francs) or about 70 cents, from the great adulteration of the metal, one third of it being copper. His successor Thieu-fri coined both gold and silver dollars, having a dragon on one side and his name on the reverse. The whole, half and quarter gold dollar are worth \$12, \$6 $\frac{1}{2}$, and \$3 $\frac{1}{4}$ respectively ; the same denominations of silver are worth \$0.70, \$0.35 and \$0.17. The workmanship of all these gold and silver coins is highly creditable.

The copper coinage is cast ; 60 *dong* or cash make 1 *mot tien* or heap ; and 10 *mot tien* make 1 *kwan* or string ; these 600 cash are worth between 50 and 60 cents, and weigh about 3 $\frac{1}{2}$ *lbs. av.* The rates of exchange between cash and the silver coins vary from three to six *kwan* to a dollar. On the average, 2600 cash are equal to a Spanish dollar, and 600 to 25 cents.

The earliest silver and gold coins are shaped like pieces of Indian ink but much thinner. They have slightly raised edges, and their value and date are marked on them in raised characters. At every new issue the coins previously current lose several per cent. of their value. This custom is extremely inconvenient, particularly to foreigners, who are unable to read the characters which are stamped on them.

The *weights* in Cochinchina, although bearing the same name, are heavier than in China. They are :—

10 ai or atoms	} make	1 tran ;	equal to .000003905 gramme
10 tran		1 huy ;	.00003905
10 huy		1 chau ;	.0003905
10 chau		1 hot, in Chinese <i>hwoh</i> ;	.0003905
10 hot		1 hao, do. <i>hau</i> ;	.003905
10 hao		1 li, do. <i>li</i> ;	.03905
10 li		1 phan, do. <i>fan</i> ;	.3905
10 phan		1 dong, do. <i>tsien</i> ;	3.905
10 dong or mace		1 luong, do. <i>liang</i> ;	39.05
10 luong or tael		1 nen ;	390.5
16 luong		1 can, do. <i>kin</i> ;	624.8
10 can or catty		1 yen ;	6.248 kilograms
50 can		1 binh ;	31.24
100 can		1 ta, do. <i>tan</i> ;	62.48
500 can		1 quan.	312.4

The *luong* weighs about $1\frac{1}{4}$ oz., but the *can* is 1*lb.* 6oz. 10*grs.* av.

Measures of grain vary in every province, and purchasers always agree beforehand what measures shall be used. The *hao* is 28 litres, or about $\frac{2}{3}$ of a bushel, 2 of which make a *shita* or *tao*.

Land measures bear the same proportion to each other as in China. The *thuoc* (cubit, chih, or foot) contains 18 French inches, or 19.12 inches English ; it is also used by architects and carpenters.

10 li	} make	1 phan, in Chinese <i>fan</i> ;	equal to .0048726 metres.
10 phan		1 tac, do. <i>tsun</i> ;	.048726
10 tac		1 thuoc, do. <i>chih</i> ;	.48726
5 thuoc		1 ngu or perch ;	2.4363
3 ngu		1 sao or rod ;	7.3089
10 sao		1 mau, in Chinese <i>mau</i> .	73.089

Tungking and Camboja. Siamese Trade. Treaty with Great Britain.

By another perch of $16\frac{1}{2}$ *thouc*, by which land is measured, 10 *sao* in a *mau* or acre, makes it 80.3979 metres.

Long measures. The Cochinchinese ell or *thouc* R used only for measuring cloths and silks, contains $25\frac{1}{2}$ *ins.* English. There are six values to the *thuoc*, varying from 0.405 to 0.64068 metres, or 16 *ins.* to 25.4 *ins.*

10 phan	} make	1 tac (<i>tsun</i>);	equal to	.064968 metres.
10 tac		1 <i>thouc</i> (<i>chik</i>);	=	.64968
10 <i>thouc</i>		1 <i>truong</i> (<i>chung</i>);	=	6.4968 or $21\frac{7}{8}$ ft. Eng.
30 <i>thouc</i>		1 <i>cai vai</i> , or that;		19.4904
10 <i>cai vai</i>		1 <i>qou</i> .		194.904

The *li* is $\frac{1}{10}$ th of the common French league, 25 to a degree, or 444.39 metres, equal to 1458 feet English. A *dam* or stadium is two *li* or 888 metres; 5 *dam* make 1 league.

As no trade is now carried on with TUNGKING, we are ignorant if any difference exist between the moneys, weights, and measures of that place and those of the rest of Cochinchina, to which it is now united.

In CAMBOJA, which has been partitioned by the kings of Cochinchina and Siam, there are small round silver coins, of various size, the largest hardly equal in size to a farthing; which are said by Milburn to be called *galls*. They are roughly made, and very liable, from their extreme smallness, to frequent loss. Spanish dollars are also employed there, and for small change, the Cochinchinese cash. The weights and measures are the same as in China.

Section 9.

SIAMESE TRADE, MONEYS, &c.

The foreign trade of Siam has taken a new start since the accession of the present king, and will probably increase rapidly under the more favorable regulations which have been established by the Siamese government. The Siamese ships trade largely with China, and as this branch is not prohibited to foreign vessels, it is probable that much of their traffic with the country will be in the same direction. The British Treaty was signed April 18th, 1855, and as it contains the principal rules under which the Siamese are ready to trade with all countries, is inserted in full.

Her Majesty the Queen of the United Kingdom of Great British and Ireland and all its dependencies, and their Majesties Phra Bard Somdetch Phra Paramendo Maha Mongkut Phra Choni Klan Chan Yu Hua, the first King of Siam, and Phra Bard Somdetch Phra Pawarendo Ramese Mahiswarese Phra Pin Klan Chan Yu Hua, the second King of Siam, desiring to establish, upon firm and lasting foundations, the relations of peace and friendship existing between the two countries, and to secure the best interests of their respective subjects, by encouraging, facilitating, and regulating their industry and trade, have resolved to conclude a Treaty of amity and commerce for this purpose, and have therefore named as their Plenipotentiaries; that is to say,

British Consul at Siam. Criminals. Limits of Trade. Buying Lands.

Her Majesty the Queen of Great Britain and Ireland, Sir John Bowring, Knight, Doctor of Laws, &c., &c ;

And their Majesties the first and second Kings of Siam, his Royal Highness Krom Hluang Wongsa Dhiraj Suidh ; his Excellency Somdetch Chan Phaya Param Maha Puyura Wongse ; his Excellency Somdetch Chan Phaya Param Maha Bijrineate ; his Excellency Chan Phaya Sri Surrwongse Simuha Phra Kralahome ; and his Excellency Chan Phaya, acting Phraklang.

Who, after having communicated to each other their respective full powers, found them to be in good and due form, have agreed upon and concluded the following Articles :—

ART. I.—There shall henceforward be perpetual peace and friendship between Her Majesty the Queen of Great Britain and Ireland and her successors, and their Majesties the first and second Kings of Siam and their successors. All British subjects coming to Siam shall receive from the Siamese government full protection and assistance to enable them to reside in Siam in all security, and trade with every facility, free from oppression or injury on the part of the Siamese. And all Siamese subjects going to an English country shall receive from the British government the same complete protection and assistance that shall be granted to British subjects by the government of Siam.

ART. II.—The interests of all British subjects coming to Siam shall be placed under the regulation and control of a consul, who will be appointed to reside at Bangkok. He will himself conform to, and will enforce the observance by British subjects of all the provisions of this Treaty, and such of the former Treaty negotiated by Captain Burney in 1826, as shall still remain in operation. He shall also give effect to all rules or regulations as are now or may hereafter be enacted for the government of British subjects in Siam, the conduct of their trade, and for the prevention of violations of the laws of Siam. Any disputes arising between British and Siamese subjects shall be heard and determined by the consul in conjunction with the proper Siamese officers ; and criminal offenses will be punished, in the case of English offenders, by the consul, according to English laws, and in the case of Siamese offenders, by their own laws, through the Siamese authorities. But the consul shall not interfere in any matters referring solely to Siamese, neither will the Siamese authorities interfere in questions which only concern the subjects of Her Britannic Majesty.

It is understood, however, that the arrival of the British Consul at Bangkok shall not take place before the ratification of this Treaty, nor until ten vessels owned by British subjects, sailing under British colors and with British papers, shall have entered the port of Bangkok for the purposes of trade, subsequent to the signing of this Treaty.

ART. III.—If Siamese, in the employ of British subjects, offend against the laws of their country, or if any Siamese having so offended, or desiring to desert, take refuge with a British subject in Siam, they shall be searched for, and upon proof of their guilt or desertion, shall be delivered up by the Consul to the Siamese authorities. In like manner, any British offenders, resident or trading in Siam, who may desert, escape to, or hide themselves in Siamese territory, shall be apprehended and delivered over to the British Consul on his requisition. Chinese, not able to prove themselves to be British subjects, shall not be considered as such by the British Consul, nor be entitled to his protection.

ART. IV.—British subjects are permitted to trade freely in all seaports of Siam, but may reside permanently only at Bangkok, or within the limits assigned by this Treaty. British subjects coming to reside at Bangkok may rent land and buy or build houses, but cannot purchase lands within a circuit of two hundred *seng* (not more than four miles English) from the city walls, until they shall have lived in Siam for ten years, or shall obtain special authority from the Siamese government to enable them to do so. But, with exception of this limitation, British residents in Siam may at any time buy or rent houses, lands, or plantations, situated anywhere within a distance of twenty-four hours' journey from the city of Bangkok, to be computed by the rate at which boats of the

Passports. Servants. Ships of war. Export and Import Duties. Opium.

country can travel. In order to obtain possession of such lands or houses, it will be necessary that the British subject shall, in the first place, make application through the Consul to the proper Siamese officer, and the Siamese officer and the Consul, having satisfied themselves of the honest intentions of the applicant, will assist him in settling, upon equitable terms, the amount of the purchase money, will make out and fix the boundaries of the property, and will convey the same to the British purchaser under sealed deeds, whereupon he and his property shall be placed under the protection of the Governor of the district, and that of the particular local authorities: he shall conform in ordinary matters to any just directions given him by them, and will be subject to the same taxation that is levied on Siamese subjects. But if, through negligence, the want of capital, or other cause, a British subject should fail to commence the cultivation or improvement of the lands so acquired within a term of three years from the date of receiving possession thereof, the Siamese government shall have the power of resuming the property upon returning to the British subject the purchase money paid by him for the same.

ART. V.—All British subjects intending to reside in Siam shall be registered at the British Consulate. They shall not go out to sea, nor proceed beyond the limits assigned by this Treaty for the residence of British subjects, without a passport from the Siamese authorities, to be applied for by the British Consul, nor shall they leave Siam, if the Siamese authorities show to the British Consul that legitimate objections exist to their quitting the country. But within the limits appointed under the preceding article, British subjects are at liberty to travel to and fro, under the protection of a pass, to be furnished them by the British Consul, and counter-sealed by the proper Siamese officer, stating, in the Siamese character, their names, calling, and description. The Siamese officers at the government stations in the interior, may, at any time, call for the production of this pass; and, immediately on its being exhibited, they must allow the parties to proceed, but it will be their duty to detain those persons who, by traveling without a pass from the Consul, render themselves liable to the suspicion of their being deserters; and such detention shall be immediately reported to the Consul.

ART. VI.—All British subjects visiting or residing in Siam shall be allowed the free exercise of the Christian religion, and liberty to build churches in such localities as shall be consented to by the Siamese authorities. The Siamese government will place no restrictions upon the employment by the English of Siamese subjects as servants, or in any other capacity. But wherever a Siamese subject belongs or owes service to some particular master, the servant who engages himself to a British subject, without the consent of his master, may be reclaimed by him, and the Siamese government will not enforce an agreement between a British subject and any Siamese in his employ, unless made with the knowledge and consent of the master, who has a right to dispose of the service of the person engaged.

ART. VII.—British ships-of-war may enter the river and anchor at Paknam, but they shall not proceed above Paknam, unless with the consent of the Siamese authorities, which shall be given when it is necessary that a ship shall go into dock for repairs. Any British ship-of-war conveying to Siam a public functionary, accredited by the British government to the court of Bangkok, shall be allowed to come up to Bangkok, but shall not pass the forts called Phrachamit and Pit pach nuck, unless expressly permitted to do so by the Siamese government. But in the absence of a British ship-of-war, the Siamese authorities engage to furnish the Consul with a force sufficient to enable him to give effect to his authority over British subjects, and to enforce discipline among British shipping.

ART. VIII.—The measurement duty hitherto paid by British vessels trading to Bangkok under the Treaty of 1826, shall be abolished from the date of this Treaty coming into operation; and British shipping or trade will thenceforth be only subject to the payment of Import and Export duties on the goods landed or shipped.

Tariff on Exports. Consul to enforce Regulations. Revision in 10 years.

On all articles of Import, the duty shall be three per cent., payable at the option of the importer, either in kind or money, culculated upon the market value of the goods. Drawback of the full amount of duty shall be allowed upon goods found unsaleable and re-exported. Should the British merchant and the custom-house officers disagree as to the value to be set upon imported articles, such disputes shall be referred to the Consul and proper Siamese officer, who shall each have the power to call in an equal number of merchants as assessors, not exceeding two on either side, to assist them in coming to an equitable decision.

Opium may be imported free of duty, but can only be sold to the opium farmer or his agents. In the event of no arrangement being effected with them for the sale of the opium, it shall be re-exported, and no impost or duty shall be levied thereon. Any infringement of this regulation shall subject the opium to seizure and confiscation.

Articles of Export, from the time of production to the date of shipment, shall pay one impost only, whether this be levied under the name of inland tax, transit duty, or duty on exportation. The tax or duty to be paid on each article of Siamese produce, previous to or upon exportation, is specified in the tariff attached to this Treaty; and it is distinctly agreed, that goods or produce that pay any description of tax in the interior shall be exempted from any further payment of duty on exportation. English merchants are to be allowed to purchase direct from the producer the articles in which they trade, and in like manner to sell their goods directly to the parties wishing to purchase the same, without the interference in either case of any other person.

The rates of duty laid down in the tariff attached to this Treaty are those that are now paid upon goods or produce shipped in Siamese or Chinese vessels or junks; and it is agreed that British shipping shall enjoy all the privileges now exercised by, or which hereafter may be granted to Siamese or Chinese vessels or junks.

British subjects will be allowed to build ships in Siam, on obtaining permission to do so from the Siamese authorities.

Whenever a scarcity may be apprehended of salt, rice, and fish, the Siamese government reserve to themselves the right of prohibiting, by public proclamation, the exportation of these articles.

Bullion or personal effects may be imported or exported, free of charge.

ART. IX.—The Code of Regulations appended to this Treaty shall be enforced by the Consul with the coöperation of the Siamese authorities, and they, the said authorities and Consul, shall be enabled to introduce any further regulations which may be found necessary in order to give effect to the objects of this Treaty.

All fines and penalties inflicted for infraction of the provisions and regulations of this Treaty, shall be paid to the Siamese Government.

Until the British Consul shall arrive at Bangkok and enter upon his functions, the consignees of British vessels shall be at liberty to settle with the Siamese authorities all questions relating to their trade.

ART. X.—The British government and its subjects will be allowed free and equal participation in any privileges that may have been, or may hereafter be granted by the Siamese government to the government or subjects of any other nation.

ART. XI.—After the lapse of ten years from the date of the ratification of this Treaty, upon the desire of either the British or Siamese Government, and on twelve months' notice given by either party, the present, and such portions of the Treaty of 1826 as remain unrevoked by this Treaty, together with the Tariff and Regulations thereunto annexed, or those that may hereafter be introduced, shall be subject to revision by commissioners appointed on both sides for this purpose, who will be empowered to decide on and insert therein such amendments as experience shall prove to be desirable.

Discharging and loading of ships. Smuggling. Delivery of guns at Paknam.

ART. XII.—This Treaty, executed in English and Siamese, both versions having the same meaning and intention, and the ratifications thereof having been previously exchanged, shall take effect from the 6th day of April in the year 1856 of the Christian era, corresponding to the 1st day of the 5th month of the 1218th year of the Siamese civil era.

In witness whereof, the abovenamed Plenipotentiaries have signed and sealed the present Treaty in quadruplicate, at Bangkok, on the 18th day of April, in the year 1855 of the Christian era, corresponding to the 2d day of the 6th month of the 1217th year of the Siamese civil era.

(Signed) JOHN BOWRING.

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General Regulations

UNDER WHICH BRITISH TRADE IS TO BE CONDUCTED IN SIAM.

I.—The master of every English ship coming to Bangkok to trade, must, either before or after entering the river, as may be found convenient, report the arrival of his vessel at the custom-house at Paknam, together with the number of his crew, and the port from whence he comes. Upon anchoring his vessel at Paknam, he will deliver into the custody of the custom-house officers all his guns and ammunition, and a custom-house officer will then be appointed to the vessel, and will proceed in her to Bangkok.

II.—A vessel passing Paknam without discharging her guns and ammunition as directed in the foregoing regulation, will be sent back to Paknam to comply with its provisions, and will be fined eight hundred ticals for having so disobeyed. After delivery of her guns and ammunition, she will be permitted to return to Bangkok to trade.

III.—When a British vessel shall have cast anchor at Bangkok, the master, unless a Sunday should intervene, will, within four and twenty hours after arrival, proceed to the British Consulate, and deposit there his ship's papers, bills of lading, &c., together with a true manifest of his import cargo; and upon the Consul's reporting these particulars to the custom-house, permission to break bulk will at once be given by the latter.

For neglecting to report his arrival, or for presenting a false manifest, the master will subject himself, in each instance, to a penalty of four hundred ticals, but he will be allowed to correct, within twenty-four hours after delivery of it to the Consul, any mistake he may discover in his manifest, without incurring the abovementioned penalty.

IV.—A British vessel breaking bulk and commencing to discharge, before the permission shall be obtained, or smuggling, either when in the river or outside the bar, shall be subject to the penalty of eight hundred ticals, and confiscation of the goods so smuggled or discharged.

V.—As soon as a British vessel shall have discharged her cargo and completed her outward lading, paid all her duties, and delivered a true manifest of her outward cargo to the British Consul, a Siamese port-clearance shall be granted her on application from the Consul, who, in the absence of any legal impediment to her departure, will then return to the master his ship's papers, and allow the vessel to leave. A custom-house officer will accompany the vessel to Paknam, and on arriving there, she will be inspected by the custom officers of that station, and will receive from them the guns and ammunition previously delivered into their charge.

VI.—Her Britannic Majesty's Plenipotentiary, having no knowledge of the Siamese language, the Siamese government have agreed, that the English text of these regulations, together with the Treaty of which they form a portion, and the tariff herewith annexed, shall be accepted as conveying in every respect their true meaning and intention.

Siamese Tariff.

Transit Duty.

Siamese Gold and silver Coins.

Tariff of Export and Inland Duties

TO BE LEVIED ON ARTICLES OF TRADE.

SEC. I.—The undermentioned articles shall be entirely free from inland or other taxes on production, or transit, and shall pay export duty as follows:—

	Tical. Satang. Fuang.		Tical. Satang. Fuang.
1 Ivory,	10 0 0	26 Gum Benjamin,	4 0 0
2 Gamboge,	6 0 0	27 Angrai Bark,	0 2 0
3 Rhinoceros' horns,	50 0 0	28 Agilla Wood,	2 0 0
4 Cardamoms, best,	14 0 0	29 Ray Skins,	3 0 0
5 Do. bastard,	6 0 0	30 Old Deer's Horns,	0 1 0
6 Dried Mussels,	1 0 0	31 Do. soft or young,	10 ½ cent.
7 Pelicans' Quills,	2 2 0	32 Deer Hides, fine,	8 0 0
8 Betel Nut, dried,	1 0 0	33 Do. common,	3 0 0
9 Krachi Wood,	0 2 0	34 Deer Sinews,	4 0 0
10 Shark's Fins, white,	6 0 0	35 Buffalo and Cow	
11 Shark's Fins, black,	3 0 0	Hides,	0 1 0
12 Luckraban Seed,	0 2 0	36 Elephants' Bones,	1 0 0
13 Peacock's Tails,	10 0 0	37 Tigers' Bones,	5 0 0
14 Buffalo & Cow Bones,	0 0 0 ½	38 Buffalo Horns,	1 0 0
15 Rhinoceros' Hides,	0 2 0	39 Elephants' Hides,	0 1 0
16 Hide Cuttings,	0 1 0	40 Tigers' Skins,	0 1 0 ½ skin
17 Turtle Shells,	1 0 0	41 Armadillo Skins,	4 0 0
18 Do. soft,	1 0 0	42 Stick Lac,	1 1 0
19 Bicho de Mar,	3 0 0	43 Hemp,	1 2 0
20 Fish Maws,	3 0 0	44 Dried Fish, <i>Plaheng</i> ,	1 2 0
21 Birds' Nests, un-		45 Do. <i>Plasalit</i> ,	1 0 0
cleaned,	20 ½ cent.	46 Sapan Wood,	0 2 1
22 Kingfishers' Feathers,	6 0 0	47 Salt Meat,	2 0 0
23 Cutch,	0 2 0	48 Mangrove Bark,	0 1 0
24 Beyche Seed (<i>Nur</i>		49 Rose Wood,	0 2 0
<i>Vomica</i>),	0 2 0	50 Ebony,	1 0 0
25 Pungtarai Seed,	0 2 0	51 Rice,	4 0 0

SEC. II.—The undermentioned articles being subject to the inland or transit duties herein named, and which shall not be increased, shall be exempt from export duty:—

	Tical. Satang. Fuang.		Tical. Satang. Fuang.
52 Sugar, white,	0 2 0	53 Dried Prawns,	one-twelfth.
53 Do. red,	0 1 0	59 Til Seed,	"
54 Cotton, clean and		60 Silk, Raw,	"
uncleaned,	10 per cent.	61 Bees' Wax,	one-fifteenth.
55 Pepper,	1 0 0	62 Tallow,	1 0 0 ½ pecul.
56 Salt Fish, <i>Platu</i> ,	1 0 0	Salt,	6 0 0
57 Beans and Peas,	one-twelfth.	Tobacco,	1 2 0

SEC. III.—All goods or produce, unenumerated in this Tariff, shall be free of export duty, and shall only be subject to one inland tax or transit duty, not exceeding the rate now paid.

The fineness of the precious metals is expressed as in China by toques or touches, 100 denoting purity. They are weighed by the tical of 9 *dot*. 10 *grs.* troy.

The coins used in Siam are small globular pieces of gold and silver, of various sizes and denominations. The only small change is in cowries; no regard is paid to shape of the shells.—Accounts are kept in ticals, satangs, and fuangs, in the following relative proportions:—

<i>Siamese coins.</i>	<i>Dollars taken.</i>	<i>Weights.</i>	<i>Measures of length and size.</i>
From 200 to 450 Bier or cowries	-	-	{ 1 Pai; equal to 1½ cts.
1 Pai	-	-	{ 32 Saga or red beans;
4 Pai or Sompai	-	-	{ 1 Fuang; 7½ cts.
2 Fuang	-	-	{ 1 Salung or miam 15 cts.
4 Salung or miam	-	-	{ 1 Bat, or tical; 60 cts.
4 Bat	-	-	{ 1 Tumlung, or tael; = \$2.40
80 Bat	-	-	{ 1 Chang, or catty; = \$48
50 Chang	-	-	{ 1 Háp, or pecul; \$2400
100 Háp	-	-	{ 1 Pura. \$240,000

The gold and silver ticals are the principal coins; the former is said to pass for 10 of the latter; but the common exchange is from 14 to 17 ticals of silver for one of gold. There are also half ticals, salungs, and fuangs of both metals, and half fuangs of silver. The silver tical weighs 225½ English *grs.*, and is from 11 oz. 4 *dts.* to 11 oz. 12 *dts.* fine; thus it is worth from 29*d.* to 30*d.* sterling; 2 pass commonly for a Spanish dollar, and 2½ for a Dutch ducatoon. From 800 to 1000 cowries are given in exchange for a fuang; 10 salung are accounted equal to 1 Chinese tael, so that 5 Siamese taels equal 8 Chinese taels.

Spanish dollars are taken at Bangkok in exchange for cargo, or for ship dues, and by the government converted into the currency of the country, but they are not current in the bazar, or in common commercial transactions.

The Siamese *Weights* are the same as in the table of money.

4 Ticals	make 1 tael,
20 Taels	" 1 catty = 2 lbs. 9 oz. 4½ <i>dts.</i> av.
50 Catties or 80 ticals	" 1 pecul = 129 lbs. av.

The *coyang* is also known by merchants, and usually reckoned at 40 peculs; the duty on a few of the articles in the tariff is levied by the *coyang*.

The *Measures of length* are:—

12 Niu	} make	1 Kúp	= 19½ Eng. inches.
2 Kúp		1 Sòk	= 39 Eng. inches.
2 Sòk		1 Ken	= 78 Eng. inches.
2 Ken		1 Wá	= 130 Eng. inches.
20 Wá		1 Sen	= 2½ miles nearly.
100 Sen		1 Roeneng or league	= 9½ miles.
400 Sen		1 Yòte	

The *dry Measures*, and those for measuring liquids, are but few; and these, from the nature of the vessels employed, are very indefinite:—

DRY MEASURE.	{ 25 Coconut shells full	make 1 Bucket.
	{ 80 Buckets	make 1 Cart.
LIQUID MEASURE.	{ 20 Coconut shells full	make 1 Bucket.
	{ 100 Buckets	make 1 Cart.

Coins in Java.	Paper money.	Weights.	Measures.
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Section 10.

NETHERLANDS INDIA.

THE monetary system of Netherlands India has latterly been assimilated to that of Holland. The silver standard coin is the *gülden*, which is nominally divided into 100 *centen*; and there are also half and quarter *gülden*, and dimes of 10 *centen*. The new Netherlands guilder has been imported in large quantities, and though the monetary system is not entirely carried into effect, it is so nearly so now that silver money commands only a very small premium over paper. Gold and silver coins of all descriptions are admitted into Java, but are rather articles of trade than parts of the currency.

The only copper coin used in the island is the *duiten*, single and double; 120 single *duiten* go to the guilder, and will remain in current use until converted by government in the national currency. Every other kind of copper coin is strictly prohibited.

A paper currency is also issued under governmental control by the Java Bank, at Batavia; this bank has branch offices at Soerabaya and Samarang. The notes are for *f*.1000, *f*.500, *f*.300, *f*.200, *f*.100, *f*.50, and *f*.25, for silver currency; and in sets of *f*.500, *f*.300 *f*.200, *f*.100, *f*.50, *f*.25, *f*.10 and *f*.5 for copper currency. These bills are being gradually taken up by the government, and specie issued instead. Government has established a fixed rate of agio between copper and silver of 20 per cent.

The *weight* for gold and silver is the Dutch mark troy, divided into 9 reals, each weighing 422 *grs*. English. The commercial weights in common use are based on the Chinese weights, thus:—

16 Taels	} make	{	1 Catty; =	14 lbs. Dutch troy.
100 Catties			1 Pecul; =	125 lbs. ditto, or 136 lbs. avoird.
3 Peculs			1 small Bahar; - - -	= 408 —
4½ Peculs			1 large Bahar; - - -	= 612 —

In foreign trade, however, the Dutch troy pound of 2 marks is generally used. The proportions of Dutch and English weights are,

1 Dutch troy pound - - = 7596 *grs*. troy. Eng.

1 Dutch commercial pound = 7625 — —

The *measures* for rice and grain are the *pecul* and *coyung*, and for smaller quantities, the *timbang* and *gantang*. The *coyung* weighs at

Batavia,	27 peculs,	or 3375 lbs troy Dutch.
Samarang,	28 „	or 3500 lbs. — —
Soerabaya,	30 „	or 3750 lbs. — —

The *timbang* contains 5 peculs or 10 sacks; 5 *gantangs* make 1 *measure*, and 46 *measures* are equal to a *last*. These measures are principally in use among the natives. The most general liquid measure, in all the Dutch settlements, is the *kan*, 33 of which are equal to a little more than 13 English gallons. Of long measure, the *el* is 27½ English inches; and the foot of 12 *duimen* or Dutch inches, is equivalent to 12⅔ English inches.

Port, River, and Light Dues at Manila. Coins. Weights. Measures.

Section 11.

PHILIPPINE ISLANDS.

The ports of Manila and Sual in the island of Luzon, Ilo-ilo in the island of Panay, and Zamboangan in Mindanao, are now opened to the ships of all nations at peace with Spain.

Port Dues.

A foreign vessel, discharging or loading whole or part cargo,.....	25	per Ton.
A foreign vessel arriving in ballast, and departing in ballast,.....	12½	cents
Do. putting in for repairs, provisions, &c., or stress of weather..	12½	cents
But if she lands or takes anything in the shape of cargo, she pays the full dues of.....	25	cents
Coin is not considered cargo.		

River Dues.

Vessels discharging or taking in cargo,.....per ton	6¼	cts.	Anchoring in the Bay.	18¾	cts.
Vessels neither discharging nor taking in cargo,.....	¾	"	Entering the River.	6¼	"
Vessels entering in ballast and taking cargo, or entering in cargo and going out in ballast,.....	¾	"		9¾	"
Vessels entering and departing in ballast,.....	free			6¼	"

N. B. A vessel going to Manila in ballast to load, would pay only 3½ cents per ton river dues; but if she takes any parcels of musters, &c., they will be considered as cargo, and subject her to full River Dues of 6¼ cents per ton.

Light Dues on all vessels, 6¼ cents per ton.

Coins.—Accounts are kept in dollars, rials, and granos, in the following proportions:

34 Maravedis, or 12 granos	} make {	1 rial;
8 Rials, or quintos		1 silver dollar or peso;
16 Dollars		1 gold doubloon.

The weights commonly in use are the *pecul* and its parts. There are also the following Spanish weights:

8 Drams	} make {	1 Ounce
16 Ounces or 2 marks		1 Pound
25 Pounds		1 Arroba, = 25½ lbs. av.
4 Arrobas		1 Quintal; = 102 lbs. av.
5½ Arrobas, or 137½ lbs.		1 Pecul; = 140 lbs. av.

Measures.—The Spanish foot is about 11½ English inches. It is divided into 12 *pulgadas*, each containing 12 lines. The *vara*, or measure for cloth, is two feet, or 4 *palmos*, or 36 *pulgadas*, equal to 33½ English inches; 100 *varas* are equal to 92½ Eng. yards. Cotton goods and some other fabrics are however sold by the English yard. The *corg* is 20 pieces. The *caban*, a measure for grain, contains 3¼ cubic feet. 16 Manila *peculs* equal 1 ton English weight. One ton weight of hemp measures just 2 tons of 40 cubic feet.

Export Duties.

Goods are stored for 1 per cent. on entry, and the same when re-shipped; and an additional 1 per ct. is charged if they remain more than a year. A ship, on her arrival must not communicate with the shore until the harbor-master has boarded her; and 30 hours after this the manifest must be presented at the custom-house, detailing

<i>Export Duties.</i>	<i>Import Duties.</i>	<i>Opium.</i>	<i>Arms.</i>
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the marks, numbers, and bales, of the cargo; a vessel may retain her cargo on board 40 days after the manifest is presented.

The products and manufactures of the Philippine Is., or any imported goods which have paid duties by Spanish vessels to Spain,		1 per cent.
Same by Spanish vessels to any other country.....		1½ "
By foreign vessels to Spain,.....		2 "
By foreign vessels to any other country,.....		3 "
<i>Hemp</i> , {	by Spanish vessels to any place,.....	1½ "
	by foreign vessels to any place,.....	1 "
<i>Tobacco</i> , in leaf or manufactured,.....		free.
<i>Rice</i> {	by Spanish vessels.....	1½ per cent.
	by foreign vessels.....	4½ "
<i>Silver</i> , coined {	by Spanish vessels.....	2 "
	by foreign vessels,.....	4 "
<i>Silver</i> uncoined, and Gold coined or uncoined.....		free.

Import Duties

Are levied on a fixed valuation, according to the following scale:—

Spanish goods imported	{ in Spanish vessels.....	3 per cent.	
	{ in foreign bottoms.....	8 "	
Foreign goods imported	{ in Spanish vessels.....	7 "	
	{ in foreign vessels.....	14 "	
Do. do. except from	{ Singapore in Spanish ships.....	8 "	
	{ China in Spanish ships.....	9 "	
Spiruous liquors from Spain	{ in Spanish ships.....	10 "	
	{ in foreign bottoms.....	25 "	
Do. do. foreign ports	{ in Spanish ships.....	30 "	
	{ in foreign bottoms.....	60 "	
Beer and cider from Spain	{ in Spanish ships.....	3 "	
	{ in foreign bottoms.....	10 "	
Do. do. foreign ports	{ in Spanish ships.....	20 "	
	{ in foreign ships.....	25 "	
Spanish wines of all sorts,	{ in Spanish vessels.....	3 "	
	{ in foreign ships from Spain.....	8 "	
Wines of all sorts, from foreign countries	{ in Spanish vessels.....	40 "	
	{ in foreign ships.....	50 "	
Except champagne and con- stancia,	{ in Spanish vessels.....	7 "	
	{ in foreign craft.....	14 "	
Foreign fabrics of cotton and silk in imitation of native cloths, especially stripes or checks of black, blue or purple colors, grey, white or stamped cottons from Madras or Bengal, towels, napkins, and table-cloths.....		15 p ^{er} ct.	25
Cotton twist, grey, black, blue, or purple, bolos (a kind of bowie-knife), clothes, boots, shoes, preserved, candied, or pickled fruits		40	50
Madras handkerchiefs and cambayas.....		20	30
Bichó-de-mar, rattans, diamonds, tortoise-shell, birds-nests and mother-o'-pearl.....		1	2
Machines of all kinds for the improvement of native industry, (except printing-presses) red, yellow, and green cotton twist, gold and silver coin and bullion, plants and seeds.....			free.
Tropical productions like those of the Philippines, gunpowder and arrack.....			prohibited.

Opium is received in deposit, and sold by permission of government to the Chinese settlers alone. Swords, fire-arms, muskets, pistols, and all kinds of weapons (except cannon and side-arms), cannot be imported for consumption without special permission, but may be stored.

Singapore.	Malacca.	Penang.	Coins in use.	Weights.
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Section 12.

MALAYAN STATES, SINGAPORE, &c.

The *chief coins* throughout Ultra-gangetic India are the rupee and dollar. The only native coin that we know of among the Malay states is one made of tin, somewhat larger than the Chinese cash. Foreign moneys have therefore free access into these states, especially Republican dollars, and the Dutch coins in use at Batavia. In places under the British government, the rupee, with its subdivisional annas and pice, have been introduced, but they have not become the commercial currency, except at Penang.

At SINGAPORE, the government accounts are kept in rupees of 16 annas and 192 pice. Commercial accounts are kept in dollars and cents. The current copper money is a mixture of Dutch doits, pice of the Company's coinage, and coin of private manufacture, of equal value with the doit; all which pass under the name of *pice*. Ten pice make 1 *fanam*; and from 31 to 32 fanams make 1 *ringit* or dollar.

MALACCA has the same currency as Singapore, with the addition of a few old Dutch moneys, *viz.*, the rix dollar and guilder, and their subdivisional parts. The rix dollar is a nominal coin in which accounts are kept, of from 19 to 20 *fanams*, or about 192 doits; goods are bought and sold in Dutch dollars. The guilder or rupee has the value of 12 fanams; half rupees and schillings are also met with. The copper coins are the cent, half cent, and quarter cent, and a variety of others of different countries. The following is the relative value of some of the coins at Malacca.

18 Tangees or schillings,	}	make	1 Dutch dollar;
20 Do. - - -			1 Spanish dollar;
4 Doits, - - -			1 Stiver;
6 Stivers - - -			1 Schilling;
8 Schillings, - - -			1 Rix dollar;
13 do. - - -			1 Ducatoon;
10 do. - - -	}		1 English crown;
4 do. - - -			1 Madras or Arcot rupee.

At PENANG, the currency is less mixed than at Singapore and Malacca. Accounts are kept for the most part in rupees, annas, and pice, and copangs, which is a nominal money of the value of ten pice. Dollars always pass current. Gold coins, other than English sovereigns, are rarely met with in the Straits.

The same denominations of money, weights and measures prevail, with various degrees of relative distinction, throughout most of the native Malay states.

Weights. The commercial weights in use, among Europeans and natives, are the Chinese pecul, catty, and tael.* A little discrepancy

* The word *pecul* is Malayan and means a load or burden; *mace* and *tael* are derived, through the Malay, from the Hindoo *masha* and *tolah*.

Measures among the Malays. No coins in Burmah. Burmese Weights.

exists in the weight of the pecul and catty in some places; and sometimes there is a distinction made between the Chinese and Malay pecul; the latter is equal, at Penang, to 142½ lbs. avoirdupois. This discrepancy arises from the use of the *bahr*, which varies considerably in weight, and is divided into 3 Malay peculs; the *bahr* is equal at Penang to 421 catties. By the Malay pecul, goods are purchased from native vessels; but they are re-sold by the Chinese pecul. By the *coyang* of 40 Chinese peculs, grain and salt are sold. The *coyang* at Penang is a measure; 45 peculs of rice, or 43 of salt, make a measurement *coyang*. Gold thread at Penang is sold by the catty of \$36 weight, or 31 oz. 4 dwts. The Chinese *dotchin* (*szema*) is commonly met with; but among merchants, English weights and scales are generally used. Gold dust is weighed by the *bunkal*, equal to \$2, or 832 grs. troy, which is divided into 16 *mains*, each *maim* containing 12 *sagas*; a catty of gold is 1¾ of the common catty. Pulse, dholl, and rice from Bengal are sold by the bag of 2 bazar maunds, or 164½ lbs. Piece goods are sold by the corge of 20 pieces, and Java tobacco by the corge of 40 baskets. At Malacca, the pecul weighs 135 lbs. av.; and 3 peculs or a *bahr* is 428 lbs.

Measures. The measures of length frequently used by the Malays and other natives is the *hasta* or cubit, equal to 18 English inches; but among Chinese, as well as Europeans, the English yard is always used. The following are the terms employed in land measures.

4 Hastas	} make	1 Depa;	=	2 yards English.
2 Depas		1 Jumba;	=	4 — —
20 Jumbas		1 Orlong.	=	80 — — or 1½ acre.

The chief measure of capacity is the *gantang*, divided into 4 *chupahs*, each about 2½ lbs. av.; the *gantang* is equal to 271.65 cubic inches, or 1¼ gallon; 10 *gantang* make 1 *parah*, and 20 make a pecul; 800 *gantang* are counted to a *coyang*, about 2 tons of 7 cwt.

Section 12.

BURMAH.

There is no coinage in this country; silver and lead pass in fragments, and are cut up and weighed, the former of various degrees of purity, and of every size from a round cake weighing 2 or 3 ticals, to small bits. Lead is usually reckoned at 500 to 1 of pure silver; but sometimes 15 viss of lead are given for a tical, and in cities only 7 or 8 viss. The rupee generally circulates as a tical, and the Indian currency is more and more extending throughout Burmah.

Burman weights are exhibited in the following table, and are used both for goods and money.

2 Small Ruays equal....	1 Large Ruay, or 1 pice.
4 Large Ruays,.....	1 Bai or Ruay,... 1 anna.
2 Bais.....	1 Moo,..... 2 annas.

Burmese Measures of Length and Capacity.	Coins in India.	Rupee.
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2 Moos.....	1 Mat,.....	4 annas, (62½ grains troy.)
4 Mats.....	1 Kyat,.....	1 tical, (252 grains troy.)
100 Kyats.....	1 Piakthah or viss.....	(3 $\frac{65}{100}$ lbs. avoirdupois.)

The small ruay is the little scarlet bean (*Abrus precatorius*) with a black spot upon it, called in America, *crab's eye*. The large ruay is the black oblong bean of the *Adenanthera pavonina*. The other weights are of brass, handsomely cast, and polished.

Measures of Length.

8 Thits (fingers' breadth) equal	1 Maik, (breadth of the hand with thumb	
1½ Maiks.....	1 Twah (span)	[extended.]
2 Twahs.....	1 Toung (cubit.)	
4 Toungs.....	1 Lan (fathom.)	
7 do.	1 Tah (bamboo or rod.)	
140 do. or 20 Tahs.....	1 Oke-tha-pah.	
7000 do. or 1000 Tahs.....	1 Taing (2 miles, 581 ft. 8 in.)	
6½ Taings or Daings, or 6400 Tahs, or 320 Okethapas, }	1 Uzena, or about 12.72 miles, (in little use except in the sacred books.)	

Measures of Capacity.

2 Lamyets are equal to.....	1 Lamay.
2 Lainays.....	1 Salay (about 1 pint.)
4 Salays.....	1 Pyee (two quarts.)
2 Pyees.....	1 Sah (a gallon.)
2 Sabs.....	1 Saik (a peck.)
2 Saiks.....	1 Kwai.
2 Kwsis.....	1 Ten.
100 Tens.....	1 Coyan.

The *ten* is what Europeans in the country call a *basket*, from the basket measure of that capacity. This full of clean rice is a common allowance to a laborer for one month. It is deemed to weigh 58½ lbs. av. or sixteen viss, or forty Penang catties.

Section 13.

INDIAN PRESIDENCIES.

BENGAL.

The old moneys of India, though consisting of but a few *denominations*, were extremely various in their intrinsic *value*. While the Mogul emperors were sole sovereigns of Hindostan, there was throughout their dominions, but one kind of silver coin, denominated the *Sicca Rupee*, as being of the weight called sicca, which was the unit of size for all other weights. The sicca weight answered to 179½ grains English, and was also divided into 16 annas, each anna subdivided into 12 pie; it was also divided into *mashas*, but the relative value of the rupee and masha appears to have varied. The gold mohur was of the same weight as the sicca rupee, and both were of extreme fineness. When the native princes established mints in their several states, they in course of time, varied from the

Indian coins and their Proportions. Rates of various Rupees. Cowries.

original standard, particularly in the purity of their coins. Hence the multiplied variety of rupees throughout India.

Since the establishment of British power, a more uniform currency has been established throughout India and its dependencies. The following table exhibits the scheme of the British-Indian monetary system, as at present established.

Gold Mohur.	Co. Rupee.	Anna.	Pysa.	Pie.	Weight in Grains.	Value.
Calcutta 1	16	256	1024	3072	204.710	£1. 13s. 8d.
Madras & Bombay 1	15	240	960	2880	180	£1. 9s. 3d.
	1	16	64	192	180	1s. 11½d.
		1	4	12		
			1	3		

The gold coins current (which can only be coined at Calcutta) are the old Calcutta mohur and the new standard mohur, and the Madras gold rupee, with half and quarter mohurs of proportionate weight. The silver coins are the rupee, halves, quarters, and two annas; of copper, there are half annas, pice or pysa (equal to three pie), and small coin of the value of one pie.

The standard of Bengal money is silver; the sicca rupee is a very common coin. It retains the same weight of pure silver, and consequently the same value, as formerly; but it has now a greater proportion of alloy, weighs 180 grains troy or one tolah, preserving the same proportions, viz. $\frac{1}{2}$ or 176 grs. of pure metal, and $\frac{1}{2}$ or 16 grs. of alloy. Within the last four or five years, the old sicca rupee has gone much out of circulation. The London mint price of the sicca rupee is 2s. 0.58d.; of the Furrukhabad rupee, 1s. 11.04d.

Comparison of Sicca and Current with other Rupees

Current rupees.		Sicca R. A. P.	
100 Sicca rupees, (Calcutta) = 116		100 Current rupees, = 86	3 3½
100 Sonaut rupees, - - = 111		100 Arcot rupees, = 93	11 7½
100 Bombay rupees, - - = 110		100 Bombay rupees, = 94	13 2½
100 Arcot rupees, - - = 108		100 Sonaut rupees, = 95	11 0½

These comparisons are made at the standard of 191.916 grs. to the sicca rupee.

A lakh is 100,000 rupees, and a crore is 100 lakhs; in accounts, sums are distinguished into crores and lakhs by being thus divided:—1,00,000, for one lakh, and 1,00,00,000 for one crore.

Small white glossy cowry shells are sometimes made use of for small payments in the bazar, and are generally thus reckoned:—

4 Cowries	} make	{	1 Gunda;	
20 Gundas			1 Pun;	
8 Puns			1 Anna;	
4 Annas			1 Cahun.	

The cahun is about $\frac{1}{4}$ rupee.

Indian weights, tola and maund. Comparison of weights. Measures.

Weights.—The unit of weights is the *tola* of 180 *grs.* troy, which is the weight of a Company's rupee, and has been taken by the government as the foundation of the larger weights—seer and maund. At the same time, the change made is so slight as hardly to be perceptible in commercial dealings in bulky goods. The modified weight is also very convenient from the circumstance that fractions are rendered entirely unnecessary in converting Indian into English weights, the *mun* or *maund* of 3200 *tolas* being exactly equal to 72 *lbs.* avoirdupois. From the *tola* upwards are derived the heavy weights, *viz.*, *chitak*, *seer*, and *mun* or *maund*; and by its subdivisions are obtained the small or jeweler's weights. The maund varies exceedingly in its weight; at Tabriz in Persia it is only 6½ *lbs.* av., while at Palloda in Ahmednugger it is 163¼ *lbs.*

Proportion of Indian large and small weights.

maund	pussere	seer	chitak	tola	masha	ruttee	dhan	Troy
1	8	40	640	3200	33400	307200	1228800	100 <i>lbs.</i>
	1	5	80	400	4800	38400	153600	
		1	16	80	960	7680	30720	2 <i>lbs.</i> 6oz.
			1	5	60	480	1920	1oz. 17d. 12gr
				1	12	96	384	7dwts. 12grs.
					1	8	32	15 <i>grs.</i>
						1	4	1.875 <i>grs.</i>

Different weights used in Bengal reduced to sicca weights.

80	} sicca weight make	{	1 Calcutta bazar seer	96 sicca weight	} make	{	1 Lucknow seer;
80			1 Serampore seer	84 — —			1 Mirzapoor seer;
82			1 Hooghly seer	96 — —			1 Allahabad seer;
84			1 Benares seer	72 11.2.10.2,76			1 Calcutta fact. seer.

The Bengal factory maund and its fractional parts, reduced to English avoirdupois weight, according to the standard received from Europe in 1787.

	lbs	oz	dms	dec		lbs	oz	dms	dec		lbs	oz	dms	dec
A Maund,	84	10	10.666		3 Seers,	5	9	9.599		2 Chitaks,	0	3	11.733	
20 Seers,	37	5	5.333		2 —	3	11	12.733		1 —	0	1	13.366	
10 —	18	10	10.666		1 —	1	13	12.866		The Bengal bazar maund is 10				
5 —	9	5	5.333		8 Chitaks,	0	14	14.933		per ct. better than the factory				
4 —	7	7	7.466		4 —	0	7	7.466		maund.				

The *masha* and its subdivisions are used for stating the fineness, as well as the weight of the precious metals. Pure silver or gold is stated at 12 *maschas* fine. The subdivision of the *tola* or 12 *maschas* into 96 *ruttees* of 4 *dhans* each, agrees exactly with the English division of the pound of 24 carats into 96 grains, subdivided into quarters, which is used in stating the purity of gold.

Measures.—In long measure, 3 *jows* make 1 *ungulee*, or finger-breadth; 5 *ungulees* 1 *mooshtika* or palm, 3 of which are a span; 6 *mooshtika* = 1 *haut* or cubit, equal to 18 inches; 4 cubits 1 fathom; and 1000 fathoms 1 *coss* or Bengal mile = 2000 yards. Cloth is measured by the *haut* or cubit, which is divided into 8 *gheria*; 1 *gheria* is equal to 3 *ungulees*; and 1 *ungulee* to 3 *jorbes* or *jows*. The *guz* of 2 *hauts* is also used; it is equal to the English yard.

<i>Bengal Measures.</i>	<i>Madras Coins.</i>	<i>Weights and Measures at Madras.</i>
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In square measure, the same *haut* or cubit is used; 5 hauts long and 4 broad make 1 *chitak*, which contains therefore 45 square feet; 16 *chitaks* make 1 *cottah* = 720 square feet; 20 *cottahs* make 1 *biggah* = 1600 square yards.

In enumerations by tale, the *corge* is equal to 4 *gundas* or 20 particulars.

Grain is sold by the *khahoon*, which contains 16 *soallces* of 20 *pallees* each, and is equal to 40 maunds; the *palle* is divided into 4 *raiks*; the *raik* into 4 *koonkees*; and the *koonkee* into 5 *chitaks*. Liquids are sold by the *chitak* of 5 sicca weight; 4 *chitaks* make 1 *pouah*; 4 *pouahs* 1 seer; and 40 *seers* 1 maund.

MADRAS.

Coins.—According to the new currency, fixed by proclamation, the 7th January, 1818, the Madras silver rupee is now the standard coin, the subdivisional parts of which are annas, quarters, and pice.

12 Pice	}	make	{	1 Anna;
4 Annas				1 Quarter;
4 Quarters				1 Silver rupee.

The public accounts are converted from star pagodas into Madras silver rupees, at the exchange of 350 rupees per 100 star pagodas. The star pagoda, worth about 8s. *stg.*, is divided into 42 to 46 *fanams*; 1 *fanam* is 80 *cash* and 12 *fanams* make a rupee. The gold coins are the rupee (of the same weight and fineness as the silver rupee), halves, and quarters. The value of the gold rupee, at the English mint price, is £1 9s. 2⁴/₂d.; and that of the silver rupee 1s. 11¹/₄d. Of the latter 15 pass for 1 of the former.

The *Weights* in use among the people are in the following proportions:—

180 Grains	}	make	{	1 Tola; = 6.58 <i>drs. av.</i>
3 Tolahs				1 Pollam; = 1 ¹ / ₂ oz. avoird.
40 Pollams				1 Vis; = 3 <i>lbs.</i> 1 oz. 5.94 <i>drs. av.</i>
8 Vis				1 Maund; = 25 <i>lbs.</i> }
20 Maunds				1 Candy; = 500 <i>lbs.</i> } in common usage.

These are the weights used in Madras; the weights at Tinnevely, Coimbatore and the northern division, though having the same relative proportions, vary in name and standard. The government has adopted the standard of the tolah of 180 grains, 3 of which make a pollam, 40 pollams a viss, and 8 viss one maund of 24*lbs.* 10oz. 15⁵/₄*drs.*

Measures.—The *covid*, used in cloth measure, is 18 inches, but the English yard is generally employed. A ground (or *munnee*) land measure, is 60-feet long and 40 broad, and contains 2400 square feet; 24 *munnees* make 1 *cawney* or 6400 sq. yds., or about 1¹/₂ of an acre. The *ady* or Malabar foot is 10.46 ins.; 24 or 26 *adies* are equal to a *goolee*; 100 square *goolees* are equal to a *cawney*; and 484 *cawnies* equal a square mile.

<i>Coins at Bombay.</i>	<i>Pearl weights.</i>	<i>Weights and Measures.</i>
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The garce of 8400 *lbs. av.* corn measure, contains 80 *paras*; a *para* is equal to 5 *marcals*, 1 *marcal* to 8 *puddies*, 1 *puddy* to 8 *ollocks*. The *marcal* should measure 800 cubic inches, and weigh 28 *lbs.* 12 *oz.* 13 *drs.* 22 *grs.* avoirdupois of fresh spring water; 77 puddies of oil are equal to 125 quarts, and 400 *marcals* to 336 Madras maunds.

BOMBAY.

Coins.—Accounts are kept in this presidency in rupees, quarters, and reas, or rupees, annas and pies:—

2 Reas	}	make	1 urdee or pie;
6 Reas			1 pice;
8 Reas			1 fuddea;
4 Pice			1 anna;
16 Annas or 80 pice			1 rupee;
100 Reas or 4 annas			1 quarter rupee;
4 Quarters or 800 reas	}		1 rupee;
15 Rupees			1 gold mohur.

The *rea* and *anna* are imaginary; the silver coins are the whole, half, and quarter rupee, and the double pice, and one third pice of copper, of which 32 half, and 64 quarter, annas make one rupee; 4 pie make one quarter anna. These copper coins are the ones now minted; the old ones are the *urdee* of 2 *reas*; *doorea* of 6 *reas*; *doogany* of 4 *reas*; *fuddea* of 8 *reas*, with 2 and 4 fuddea pieces.

Pearls, at Bombay, as at Madras, have a real and a nominal weight. The real weight is the *tank* of 1 *dwt.* 12.824 *grs. tr.*, divided into 24 ruttees or 8 *waal*, each ruttee equal to 20 *vassas*; or otherwise, the ruttee divided into 4 quarters, each quarter equal to 4 annas. The nominal weight is the *chow* divided into 4 quarters, the quarter into 5 *docra*, and the *docra* into 16 *buddams*. The nominal standard is 1 *tank* to 330 *chow*; 55 Bombay *choivs* are equal to 18 Madras *chows*.

Weights.—The English weights are in common use at Bombay; but native weights are also met with. The native commercial weights are these,

30 Pice, or 72 tanks,	}	make	1 Seer	=	11 oz. 4 <i>dwt.</i> av.
40 Seers			1 Maund	=	28 <i>lbs.</i> avoird.
20 Maunds			1 Candy	=	560 <i>lbs.</i> avoird.

Measures by which articles are sold:—

4 Seer	}	make	1 phylee;
17 Phylees			1 pharra;
8 Pharras			1 eandy;
25 Pharras			1 moora.

There is however considerable variety in the proportion of the weights; from 40 to 42 seers in Bombay, and from 40 to 44 seers in Surat, being reckoned to the maund; 3 Surat maunds or 120 seers equal 112 *lbs. av.*, or 1 cwt. The weight of the Surat maund of 44 seers, is 41.666 *lbs.* At different places in the Bombay presi-

The Maund varies. Goldsmith's weights. Measures in Bombay. Ceylon.

dency, the candy of 20 maunds varies from 560 up to 3055 *lbs. av.* At the custom-house the standard maund of 82½ *lbs.* is adopted. Silk is bought and sold by the pucca seer, 15 of which equal 28 *lbs. av.*,

To convert Surat maunds into pounds avoirdupois, multiply 28 (*i. e.* the pounds in a Bombay maund) by the number of seers by which the article is bought and sold, dividing the product by 40.

Goldsmith's weights in Guzerat.

6 Chows or chawuls	} make	1 Ruttee ;	=	1.916	grs. troy.
3 Ruttees or goonj		1 Waal ;	=	5.750	—
16 Valls or waals		1 Guddeanna ;	=	92	—
2 Guddeannas		1 Tola ;	=	184	—

The *measures of length* are the *kathee*, *guz*, and *cubit* or *covid*. The *kathee* is used only as a land measure ; the other two are more used by artificers, and sometimes in measuring piece-goods, &c. A *guz* is divided both into 20 and 24 *tussoo*, and the cubit into 14 *tussoo* ; the *guz* is about 27, and the cubit or *hath* 18 to 19 inches.

Superficial and solid measures are also the *guz* and *covid*, the *guz* being generally divided into 24 *borels*, and the *covid* into 20 *vassas*. These have other subdivisions. In solid measure, 21 cubic feet and 1216 inches are equal to a *covid* or candy ; and 26 cubic feet 206 inches are equal to a *guz*. In grain measure, the denominations are,

2 Tippires	} make	1 Seer ;	=	11 oz. 3.2 dr.	or 24.836 tolahs.
4 Seers		1 Puheelee or paily ;			
17 Puheeles		1 Para ;	=	44 lbs. 12 oz. 12.8 dr.	
8 Paras		1 Candy ;	=	358 lbs. 6 oz. 4 dr.	

Rice in the husk is sold by the *moora* of 25 paras. The *para* for salt is equal to 6 gallons, and is divided into 10½ *adholees*, each *adholee* equal to 3½ or 4 seer ; 100 paras are equal to an *anna*, each *anna* equal to 2½ tons ; and 16 annas are equal to 1 *rash*, or 40 tons. The bag of rice weighs 6 maunds, the maund being equal to from 20 to 24 *adholees*.

Section 14.

CEYLON.

Accounts are kept in English money ; the old coins still in circulation are stivers, fanams, and rix dollars ; 4 pice = 1 fanam ; 12 fanams or 48 pice = 1 rix dollar of 48 stivers, worth 1s. 6d. or 144 *chalees*. In exchanges, 4 English or 3 Dutch *chalees* = 1 pice. A ducatoon is 80, a Dutch shilling is 7½, a pagoda is 90, and a rupee is 30 stivers. A dollar is 37 to 39 fanams, a rupee is 17 fanams, or 2s. in common transactions, and a star pagoda is 59 to 61½ fanams.

In *weights*, a candy is 500 *lbs. av.* or 460 *lbs. Dutch* ; a bag is 170 *lbs. av.* ; a garce is 925½ *lbs. av.* A bale of cinnamon is 102 *lbs. av. gross*, or 87 *lbs. nett* ; an *anna* of rice in the husk is 260½ *lbs. av.*

<i>Ceylonese Measures.</i>	<i>English coins.</i>	<i>Troy and Apothecaries Weights.</i>
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The dry measures are :

4 cut chundoos	make	1 cut measure or seer
4½ seers	"	1 corney
2½ marcals	"	1 parah = 6½ wine gallons.
8 parahs	"	1 aminonam
9½ ammonams or 1800 measures	"	1 last.

Oil, milk and ghee are sold by chundoos and seers. A measure of salt weighs 44 *lbs.*, and of coffee and pepper 30 *lbs. av.* Wine and arrack are measured by the leaguer of 75 welts or 150 gallons, each gallon containing 4½ quarts, or 2¼ canades.

Section 15.

ENGLAND.

The gold coins are the sovereign and half sovereign ; the silver are the crown, half crown, florin, shilling, sixpence and threepence ; and the copper penny, halfpenny and farthing.

4 farthings	} make	1 penny ;	20 shillings	} make	1 pound or sovereign
12 pence		1 shilling ;	5 shillings		1 crown
2 shillings		1 florin ;	21 shillings		1 guinea.

A particular denomination of weight, a *carat*, is used for weighing diamonds. An ounce troy is equivalent to 151½ carats ; whence a carat is nearly equal to 3½ grains. In expressing the fineness of gold by *carats*, the term rather denotes a proportion than a weight. Thus gold 22 carats fine, signifies an alloy such that the proportion of the weight of pure gold to that of the whole weight is as 22 to 24 ; or such that it contains 22 parts by weight of pure gold, and 2 parts of some inferior metal.

British and American Weights and Measures.

1. *Imperial troy weight.*—Standard is one cubic inch of distilled water, at 62° Fahrenheit's thermometer, the barometer being 30 inches, which weighs 252.458 troy grains.

<i>grs.</i>	<i>dwts.</i>	<i>oz.</i>	<i>lb.</i>	<i>Fr. grammes.</i>
24 =	1	=		1.5552
480 =	20 =	1	=	31.1027
5760 =	240 =	12 =	1 =	373.2330

Troy weight is used in weighing gold, silver, jewels, &c., and in philosophical experiments.

2. *Apothecaries' Weight.*—Standard is the same as in troy weight, with the ounce divided into 8 drachms and 24 scruples.

<i>grs.</i>	<i>scrs.</i>	(G)	<i>Fr. Gram.</i>
20 =	1	<i>drms.</i> (3)	= 1.296
60 =	3 =	1 <i>oz.</i> (3)	= 3.888
480 =	24 =	8 =	1 <i>lb.</i> (16) = 31.102
5760 =	288 =	96 =	12 = 1 = 373.233

Medicines are compounded by this weight ; but drugs are usually bought and sold by *avoirdupois* weight.

3. *Imperial Avoirdupois weight.*—Standard the same as in troy weight ; and one *avoirdupois* pound = 7000 troy grains.

Avoirdupois Weight. English Long Measure. Square Measure.

16 =	1	lbs.	=	28.346	gram.
256 =	16 =	1	grs.	=	453.544 "
7163 =	448 =	28	1	=	12 699 kilogr.
28672 =	1792 =	112 =	4	cwt.	= 50.796 "
573440 =	35840 =	2240 =	80 =	20 = 1	ton. = 1015.920 "

The stone is 14 *lbs. av.*, except for butcher's meat and fish, which is 8 *lbs.*; 8 stone of the former is a cwt. A stone of glass is 5 *lbs.*, and a seam of glass is 24 stone, or 120 *lbs.* Hay and straw are sold by the load of 36 trusses; a truss of hay weighs 56 *lbs.*, and of straw 36 *lbs.* In weighing wool, 7 *lbs.* make a clove; 2 cloves a stone; 2 stones a tod; 6½ tods a wey; 2 weys a sack; 12 sacks a last, which is equal to 39 cwt.; 240 *lbs.* make a pack; 56 *lbs.* of butter is a firkin.

Relative value of the troy and avoirdupois pound.

Troy lb.	1	2	3	4	5	6	7	8	9	175 oz.
Avoir. lb.	0.823	1.646	2.469	3.291	4.114	4.937	5.760	6.583	7.400	192 oz.
Avoir. lb.	1	2	3	4	5	6	7	8	9	144 lbs.
Troy lb.	1.215	2.431	3.646	4.861	6.076	7.292	8.507	9.722	10.937	175 lbs.

English lineal measures.—The unit is the yard, divided into feet and inches; the multiples of the yard are the pole, furlong, and mile:—

In.	Feet.	Yards.	Poles.	Furlongs.	Miles.	Metres.
1	0.083	0.028	0.00505	0.00012626	0.0000157828	
12	1	0.333	0.06060	0.00151515	0.00018939	0.3048
36	3	1	0.1818	0.004545	0.00056818	0.9144
198	16.5	5.5	1	0.025	0.003125	5.0291
7920	660	220	40	1	0.125	201.1632
63360	5280	1760	320	8	1	1609.3059

A league is 3 miles, and 60 geographical miles, or 69½ common miles, make a degree. A palm is 3 inches, a hand is 4 inches, a span 9 inches, and a fathom 6 feet; a cubit is 18 inches, but the cubit of the Scriptures is about 22 inches. The inch is generally divided on scales into tenths, but in squaring the dimensions of works, it is divided into 12 lines, which are subdivided into 12 seconds, and then again into 12 thirds, but these duodecimals are now giving place to decimals.—In measuring cloth, 1 nail is 2¼ inches, and 4 nails or 9 inches is a quarter, and 5 quarters an ell.

Measures of superficies.—The unit is the yard subdivided into feet and inches; 144 square inches is one square foot. For land measure, the multiples of yards are the pole, rood, and acre; 30¼ (the square of 5½) square yards being a pole, &c.

Sq. feet.	Sq. yards.	Poles.	Roods.	Acres.	Sq. Metres
1	0.1111	0.00367309	0.000091827	0.000022957	0.0929
9	1	0.0330579	0.000826448	0.000206612	0.8361
272.25	30.25	1	0.025	0.00625	25.2916
10890	1210	40	1	0.25	1011.6662
43560	4840	160	4	1	4046.6648

Land is usually measured by a chain of 4 poles or 22 yds., which is divided into 100 links; 10 square chains make an acre; and 640 acres one square mile.

*Solid and Liquid Measures.**French and English Measures.*

Measures of volume. Solids are measured by cubic yards, feet, and inches; 1728 cubic inches make a cubic foot, and 27 cubic feet a cubic yard; 50 cubic feet in English ships, and 40 cubic feet in American ships, are reckoned to be a ton of measurement. For all sorts of liquids, the standard is the imperial gallon, measuring 277·274 cubic inches, and weighing 10 avoirdupois pounds of distilled water. Its parts are quarts, pints, and gills; its multiples are pecks, bushels, and quarters; the table is according to the new imperial liquid and dry measures. There is some difference between the new and old.

Gills.	Pints.	Quarts.	Gallons.	Pecks.	Bushels.	Quarters.	Lbs of water.
4	1	0.5	0.125	0.0625	0.015625	0.001953125	1½
8	2	1	0.25	0.125	0.03125	0.00390625	2½
32	8	4	1	0.5	0.125	0.015625	10
64	16	8	2	1	0.25	0.03125	20
256	64	32	8	4	1	0.125	80
2048	512	256	64	32	8	1	640

Several other measures are used for liquids, as the ale firkin of 8 gallons, the beer firkin of 9 galls., the kilderkin of 18, and the barrel of 36 gallons; a hogshead is 1½ barrel, a puncheon 2 barrels, a butt 4 barrels, and a tun 8 barrels. A rundlet is 18 gallons, and an anker 9; a pottle is half a gallon, and a coom is half a quarter or 4 bushels.

Comparative Table of French and English Weights and Measures.

MEASURES OF LENGTH.					
<i>English</i>		<i>French</i>			
1 inch,.....	2.539954	centimetre		1 gallon imperial,	4.8434579 litres
1 foot,.....	3.0479449	decimetre		1 peck,.....	9.0869159 litres
1 yard imperial,	0.91438348	metres		1 bushel,.....	36.347664 litres
1 fathom.....	1.82876696	metres		1 sack,.....	1.09043 hectolitre
1 pole,.....	5.02911	metres		1 quarter.....	2.907813 hectolitres
1 furlong,...	201.16437	metres		1 chaldron,....	13.03516 hectolitres
1 mile,.....	1609.3149	metres		<i>French</i> <i>English</i>	
<i>French</i>		<i>English</i>		1 litre	{ 1.760773 pint
1 millimetre,.....	0.03937	inch			{ 0.2200967 gallon
1 centimetre,.....	0.393708	inch		1 decalitre,	2.2009667 gallons
1 decimetre,.....	3.937079	inches		1 hectolitre,....	22.009667 gallons
	39.37079	inches		WEIGHTS.	
1 metre,.....	{ 3.2808992	feet		<i>English Troy.</i>	<i>French.</i>
	{ 1.093633	yard		1 grain,.....	0.06477 gramme
1 myriametre,	6.2138	miles		1 pennyweight..	1.55456 gramme
SQUARE MEASURE.				1 ounce,.....	31.0913 grammes
				1 pound,.....	0.3730956 kilogram.
<i>English</i>		<i>French</i>		<i>English Avoirdupois.</i>	<i>French</i>
1 yard square,	0.836097	metre square		1 drachm,.....	1.7712 gramme
1 rod,.....	25.291939	metres square		1 ounce,.....	28.3384 grammes
1 rood,...	10.116775	ares		1 pound av. imp.	0.4534148 kilogra.
1 acre,.....	0.404671	hectare		1 hundred,....	50.78246 kilogram.
				1 ton,.....	1015.649 kilogrammes
<i>French</i>		<i>English</i>		<i>French</i>	<i>English.</i>
1 metre square,	1.196033	yard square			{ 15.438 grains troy
1 are,.....	0.008845	rood			{ 0.643 pennyweight
1 hectare,....	2.473614	acres			{ 0.03216 ounce troy
SOLID MEASURE.					{ 2.63027 pounds troy
<i>English</i>		<i>French.</i>		1 kilogramme	{ 2.20548 pounds avoirdupois.
1 pint,.....	0.567932	litre			
1 quart,.....	1.135361	litre			

United States Coins. Russian Coins. South American bullion and Coins.

Section 16.

UNITED STATES OF AMERICA.

The federal money is based upon a decimal arrangement, of which the dollar is the unit; the American dollar contains $371\frac{1}{4}$ grs. of pure silver, or 416 grs. standard silver. The gold coins are the eagle, half, and quarter eagle, and dollar, respectively equal to 10, 5, $2\frac{1}{2}$ and 1 dollars; the silver coins are dollars, half and quarter dollars, dimes, half dimes and 3 cents; with cents of copper. Gold pieces of \$50 are in circulation at San Francisco, and double eagles are also coined. Spanish and South American dollars and their subdivisions pass at par with the American, but the smaller pieces are fast disappearing. The eagle contains 232 grs. pure gold. The English sovereign is worth $\$4.87\frac{7}{10}$ by mint valuation; Spanish doubloons, containing about 361 grs., are worth $\$15.56\frac{3}{4}$ on the average by mint valuation. The French franc of 69.453 grs. is valued at $18\frac{1}{2}\frac{7}{10}$ cents; but in France itself, the dollar is worth only 5 francs 25 centimes. The Dutch guilder is usually reckoned at 40 cents, and the Hamburg mark banco at $35\frac{1}{2}\frac{8}{5}$ cents.

Section 17.

RUSSIA.

From Timkowski and his annotator Klaproth, it appears that the proportionate value between the tael of silver and cash is less at the north than in this region; 1100 to 1150 cash being exchanged for a tael. A ruble is about $\frac{1}{3}$ of a tael or $137\frac{1}{2}$ cash; the franc is nearly the same part of a tael. A Russian pound is 11 taels when weighing silver, but in buying eatables, &c., 11 taels 6 mace go to a Russian pound. A tael is about $8\frac{3}{4}$ soltnicks; and 147.83 pounds, or $3\frac{3}{4}$ poods nearly, is 1 pecul. These proportions are observed at Kiakhta.

Section 18.

SOUTH AMERICAN WEIGHTS.

The weight of silver in South America is calculated in *marcos*, *ounces*, and *granos*; 12 granos make 1 ounce, and 8 ounces make 1 marco, equal to $3550\frac{1}{2}$ grs. troy, or \$8.535, or 6.124 taels.

The ley or touch stamped on the bars is computed in dineros of 24 granos each, 12 dineros being pure silver. The silver of 12 dineros is not, however, found to be quite pure at the English and Indian mints, although its inferiority is very trifling, and it is more to be relied on than the sycee silver of China.

The gold coins throughout South America are generally doubloons of \$16, with the half, quarter, and eighth of \$8, \$4 and \$2. The dollar, half dollar, quarter dollar, real and half real are the usual silver coins.

CHAPTER VII.

USEFUL TABLES, FORMULÆ, &c.

Section 1.

RELATING TO TIME.

Tab. 1.—Comparison of Christian and Chinese Years.

This table shows what year of the Chinese cycle of 60 corresponds to the Christian year, and in the next column the current year in the reign of the emperor which answers to it; *Kien*, stands for Kienlung; *Kia*, for Kiaking; *Tau*, for Taukwang; and *Hien*, for Hienfung the reigning monarch. The figures placed after some of the months show which month of that year was intercalated.

Year.	Cycle.	Reign.	Commenced.	Year.	Cycle.	Reign.	Commenced.	Year.	Cycle.	Reign.	Commenced.
1790	47	54 ^{kien}	15th Feb.	1814	11	18	21st Feb.	1838	35	18	26th Jan. ³
1791	48	55	4th Feb.	1815	12	19	10th Feb.	1839	36	19	14th Feb.
1792	49	56	24th Jan. ⁴	1816	13	20	30th Jan. ⁶	1840	37	20	3d Feb. ⁴
1793	50	57	11th Feb.	1817	14	21	17th Feb.	1841	38	21	20th Feb.
1794	51	58	31st Jan. ²	1818	15	22	6th Feb.	1842	39	22	10th Feb.
1795	52	59	21st Jan.	1819	16	23	27th Jan. ³	1843	40	23	30th Jan. ⁵
1796	53	60	9th Feb.	1820	17	24	13th Feb.	1844	41	24	18th Feb.
1797	54	1 ^{kia}	28th Jan. ⁶	1821	18	1 ^{Tau}	2d Feb.	1845	42	25	7th Feb.
1798	55	2	16th Feb.	1822	19	2	23d Jan. ⁴	1846	43	26	27th Jan. ⁶
1799	56	3	5th Feb.	1823	20	3	10th Feb.	1847	44	27	14th Feb.
1800	57	4	25th Jan. ⁴	1824	21	4	31st Jan. ⁶	1848	45	28	5th Feb.
1801	58	5	13th Feb.	1825	22	5	17th Feb.	1849	46	29	24th Jan. ⁵
1802	59	6	3d Feb.	1826	23	6	7th Feb.	1850	47	30	12th Feb.
1803	60	7	23d Jan. ³	1827	24	7	27th Jan. ⁶	1851	48	1 ^{hien}	1st Feb. ⁸
1804	1	8	11th Feb.	1828	25	8	15th Feb.	1852	49	2	20th Feb.
1805	2	9	31st Jan. ⁶	1829	26	9	4th Feb.	1853	50	3	8th Feb.
1806	3	10	19th Feb.	1830	27	10	24th Jan. ⁷	1854	51	4	29th Jan. ⁷
1807	4	11	8th Feb.	1831	28	11	11th Feb.	1855	52	5	17th Feb.
1808	5	12	29th Jan. ⁵	1832	29	12	1st Feb. ⁹	1856	53	6	6th Feb.
1809	6	13	16th Feb.	1833	30	13	20th Feb.	1857	54		26th Jan. ⁵
1810	7	14	6th Feb. ³	1834	31	14	8th Feb.	1858	55		15th Feb.
1811	8	15	27th Jan.	1835	32	15	29th Jan. ⁹	1859	56		4th Feb.
1812	9	16	15th Feb.	1836	33	16	17th Feb.	1860	57		25th Jan. ³
1813	10	17	3d Feb. ⁹	1837	34	17	5th Feb.	1861	58		13th Feb.

Tab. 2.—To find the number of Days from one Month to the same day in another.

Between	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
January, . . .	365	334	306	275	245	214	184	153	122	92	61	31
February, . .	31	365	337	306	276	245	215	184	153	123	92	62
March, . . .	59	28	365	334	304	273	243	212	181	151	120	90
April, . . .	90	59	31	365	335	304	274	243	212	182	151	121
May, . . .	120	89	61	30	365	334	304	273	212	182	151	121
June, . . .	151	120	92	61	31	365	335	304	273	243	212	182
July, . . .	181	150	122	91	61	30	365	334	303	273	242	212
August, . .	212	181	153	122	92	61	31	365	334	304	273	243
September, .	243	212	184	153	123	92	62	31	365	335	304	274
October, . .	273	242	214	183	153	122	92	61	30	365	334	304
November, .	304	273	245	214	184	153	123	92	61	31	365	335
December, .	334	303	275	244	214	183	153	122	91	61	30	365

Rules for Tab. 2. Table to find the No. of days between any two dates.

In using Table 2, bear in mind that the month *from* is in the top row, and the month *to* in the left hand column. It must be observed, that in Leap Year, if the end of the month of February be included in the time, one day must be added. If it be desired to find the number of days from a given day in one month to a different day in another, the difference between the dates must be added to, or subtracted from (as the case may be), the amount. For example:—To find the number of days between the 5th of Jan. and 12th of Nov.; to 304 (the number in the table between those two dates) add 7 days, or the time between the 5th and 12th, and it gives 311, and 312 if in leap year.

Tab. 3.—To find the number of Days from Jan. 1st to Dec 31st.

Days.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	1	32	60	91	121	152	182	213	244	274	305	335
2	2	33	61	92	122	153	183	214	245	275	306	336
3	3	34	62	93	123	154	184	215	246	276	307	337
4	4	35	63	94	124	155	185	216	247	277	308	338
5	5	36	64	95	125	156	186	217	248	278	309	339
6	6	37	65	96	126	157	187	218	249	279	310	340
7	7	38	66	97	127	158	188	219	250	280	311	341
8	8	39	67	98	128	159	189	220	251	281	312	342
9	9	40	68	99	129	160	190	221	252	282	313	343
10	10	41	69	100	130	161	191	222	253	283	314	344
11	11	42	70	101	131	162	192	223	254	284	315	345
12	12	43	71	102	132	163	193	224	255	285	316	346
13	13	44	72	103	133	164	194	225	256	286	317	347
14	14	45	73	104	134	165	195	226	257	287	318	348
15	15	46	74	105	135	166	196	227	258	288	319	349
16	16	47	75	106	136	167	197	228	259	289	320	350
17	17	48	76	107	137	168	198	229	260	290	321	351
18	18	49	77	108	138	169	199	230	261	291	322	352
19	19	50	78	109	139	170	200	231	262	292	323	353
20	20	51	79	110	140	171	201	232	263	293	324	354
21	21	52	80	111	141	172	202	233	264	294	325	355
22	22	53	81	112	142	173	203	234	265	295	326	356
23	23	54	82	113	143	174	204	235	266	296	327	357
24	24	55	83	114	144	175	205	236	267	297	328	358
25	25	56	84	115	145	176	206	237	268	298	329	359
26	26	57	85	116	146	177	207	238	269	299	330	360
27	27	58	86	117	147	178	208	239	270	300	331	361
28	28	59	87	118	148	179	209	240	271	301	332	362
29	29		88	119	149	180	210	241	272	302	333	363
30	30		89	120	150	181	211	242	273	303	334	364
31	31		90		151		212	243		304		365

In Leap Years one day must be added after the 28th of February.

THE USES OF THE FOREGOING TABLE.

I. To find the number of days from the end of the year to any day in any month of the year following.—*Rule.* Opposite the given day in the margin, look under the given month, which will show the number of days required.

II. To find the number of days from any particular day to the end of the year; suppose 27th July. From 365 (the days in a year) take the number answering to 27th July, viz, 208; the remainder is 157 days.

III. To find the number of days from any day in one month to any day in another month; suppose from 5th April to 28th November.—*Rule.* Take the difference between the numbers corresponding to those days: e. g. between Nov. 28th, the 322d day of the year, and April 5th, the 95th, are 227 days.

IV. To find the number of days between any day in one year to any day in the year following; suppose from 21st August, 1842, to 27th May, 1843. From 365 days in a year, take the number of 21st August, 233 days, which leaves 132 days in 1842; add the number up to 27th May, 117 days, together make the total 279 days required.

The Ten Stems and Twelve Branches.

75th Cycle of Sixty years.

Tab. 4.—Chinese Chronological Characters and Cyclic Table.

The Chinese cycle of sixty years began 2637 years before Christ, and is still in use, the year A. D. 1856 being the 4493d in the era, and the cycle here given the 75th since it was established. These characters are often used in books, and also by foreigners, instead of the year of the reign of the emperor, as given in Tab. 1; and it is therefore frequently resorted to. The characters are 22 in all, consisting of two sets, one of which, called 十干 *Shih kán*, the 'Ten stems,' or 天干 *Tien kán*, the 'Celestial stems,' includes ten characters:—

- 1 甲 *Kiáh*, 2 乙 *Yih*, 3 丙 *Ping*, 4 丁 *Ting*, 5 戊 *Wú*, 6 己 *Kí*,
7 庚 *Káng*, 8 辛 *Sin*, 9 壬 *Jin*, 10 癸 *Kwei*.

The other set, called 十二支 *Shih-'rh chí*, 'the Twelve branches,' and 地支 *Tí chí*, 'terrestrial branches,' consist of these twelve characters:—

- 1 子 *Tsz'*, 2 丑 *Chau*, 3 寅 *Yin*, 4 卯 *Mau*, 5 辰 *Shin*, 6 巳 *Sz'*,
7 午 *Wú*, 8 未 *Wí*, 9 申 *Shin*, 10 酉 *Yú*, 11 戌 *Siuh*, 12 亥 *Hái*.

In making the cycle, *kiáh*, the first of the ten, is joined to *tsz'*, the first of the twelve, and read *kiáh-tsz'*, which is the name of the first year of the cycle. In the same manner *yih* and *chau*, *ping* and *yín*, are united, until the ten stems are all joined. Then the first stem *kiáh* is again used with the 11th branch *siuh*, and so on up to sixty, repeating the stems six times, and the branches five times.

甲子 1804	甲戌 1814	甲申 1824	甲午 1834	甲辰 1844	甲寅 1854
乙丑 1805	乙亥 1815	乙酉 1825	乙未 1835	乙巳 1845	乙卯 1855
丙寅 1806	丙子 1816	丙戌 1826	丙申 1836	丙午 1846	丙辰 1856
丁卯 1807	丁丑 1817	丁亥 1827	丁酉 1837	丁未 1847	丁巳 1857
戊辰 1808	戊寅 1818	戊子 1828	戊戌 1838	戊申 1848	戊午 1858
己巳 1809	己卯 1819	己丑 1829	己亥 1839	己酉 1849	己未 1859
庚午 1810	庚辰 1820	庚寅 1830	庚子 1840	庚戌 1850	庚申 1860
辛未 1811	辛巳 1821	辛卯 1831	辛丑 1841	辛亥 1851	辛酉 1861
壬申 1812	壬午 1822	壬辰 1832	壬寅 1842	壬子 1852	壬戌 1862
癸酉 1813	癸未 1823	癸巳 1833	癸卯 1843	癸丑 1853	癸亥 1863

Chinese and Christian Dates.

Comparative Table for Eighteen years.

Tab. 5.—Comparison of Dates in Chinese and Christian Years.

The object of this table is to assist those who wish to ascertain the corresponding dates in the Chinese and Christian years, when they desire to render one into the other. It is often necessary in calculations of interest or other questions, to learn what a certain date or period in the Chinese year answers to in the Christian year; and for such a purpose this table is useful.

1841.	Tàu 21st	1842.	Tàu 22d	1843.	Tàu 23d	1844.	Tàu 24th	1845.	Tàu 25th	1846.	Tàu 26th
Jan. 23	1			Jan. 30	1					Jan. 27	1
Feb. 21	2	Feb. 10	1	Mar. 1	2	Feb. 18	1	Feb. 7	1	Feb. 26	2
Mar. 23	3	Mar. 12	2	Mar. 31	3	Mar. 19	2	Mar. 8	2	Mar. 27	3
Apr. 21	Int	Apr. 11	3	Apr. 30	4	Apr. 18	3	Apr. 7	3	Apr. 26	4
May 21	4	May 10	4	May 29	5	May 17	4	May 6	4	May 25	5
June 19	5	June 9	5	June 28	6	June 16	5	June 5	5	June 24	Int
July 18	6	July 8	6	July 27	7	July 15	6	July 5	6	July 23	6
Aug. 17	7	Aug. 6	7	Aug. 25	Int	Aug. 14	7	Aug. 3	7	Aug. 22	7
Sep. 15	8	Sep. 5	8	Sep. 24	8	Sep. 12	8	Sep. 2	8	Sep. 20	8
Oct. 15	9	Oct. 4	9	Oct. 23	9	Oct. 12	9	Oct. 1	9	Oct. 20	9
Nov. 13	10	Nov. 3	10	Nov. 22	10	Nov. 10	10	Oct. 31	10	Nov. 19	10
Dec. 13	11	Dec. 2	11	Dec. 21	11	Dec. 10	11	Nov. 29	11	Dec. 18	11
Jan. 11	12	Jan. 1	12	Jan. 20	12	Jan. 9	12	Dec. 29	12	Jan. 17	12

1847.	Tàu 27th	1848.	Tàu 28th	1849.	Tàu 29th	1850.	Tàu 30th	1851.	Hie 1st	1852.	Hie 2d
				Jan. 24	1			Feb. 1	1		
Feb. 15	1	Feb. 5	1	Feb. 23	2	Feb. 12	1	Mar. 3	2	Feb. 20	1
Mar. 17	2	Mar. 5	2	Mar. 24	3	Mar. 14	2	Apr. 2	3	Mar. 21	2
Apr. 15	3	Apr. 4	3	Apr. 23	4	Apr. 12	3	May 1	4	Apr. 19	3
May 14	4	May 3	4	May 22	Int	May 12	4	May 31	5	May 19	4
June 13	5	June 1	5	June 20	5	June 10	5	June 29	6	June 18	5
July 12	6	July 1	6	July 20	6	July 9	6	July 28	7	July 17	6
Aug. 11	7	July 31	7	Aug. 18	7	Aug. 8	7	Aug. 27	8	Aug. 15	7
Sep. 9	8	Aug. 30	8	Sep. 17	8	Sep. 6	8	Sep. 25	Int	Sep. 14	8
Oct. 9	9	Sep. 28	9	Oct. 16	9	Oct. 5	9	Oct. 24	9	Oct. 13	9
Nov. 8	10	Oct. 28	10	Nov. 15	10	Nov. 4	10	Nov. 23	10	Nov. 12	10
Dec. 8	11	Nov. 27	11	Dec. 14	11	Dec. 4	11	Dec. 22	11	Dec. 11	11
Jan. 6	12	Dec. 26	12	Jan. 13	12	Jan. 2	12	Jan. 21	12	Jan. 9	12

1853.	Hie 3d	1854.	Hie 4th	1855.	Hie 5th	1856.	Hie 6th	1857.	Hie 7th	1858.	Hie 8th
		Jan. 29	1					Jan. 26	1		
Feb. 8	1	Feb. 27	2	Feb. 17	1	Feb. 6	1	Feb. 23	2	Feb. 15	1
Mar. 10	2	Mar. 29	3	Mar. 18	2	Mar. 7	2	Mar. 25	3	Mar. 16	2
Apr. 8	3	Apr. 27	4	Apr. 16	3	Apr. 5	3	Apr. 23	4	Apr. 15	3
May 8	4	May 27	5	May 16	4	May 4	4	May 22	5	May 14	4
June 7	5	June 25	6	June 14	5	June 3	5	June 21	Int	June 12	5
July 6	6	July 25	7	July 14	6	July 2	6	July 20	6	July 12	6
Aug. 3	7	Aug. 24	Int	Aug. 13	7	Aug. 1	7	Aug. 19	7	Aug. 10	7
Sep. 3	8	Sep. 22	8	Sep. 11	8	Aug. 30	8	Sep. 17	8	Sep. 8	8
Oct. 3	9	Oct. 22	9	Oct. 11	9	Sep. 29	9	Oct. 17	9	Oct. 8	9
Nov. 1	10	Nov. 20	10	Nov. 10	10	Oct. 29	10	Nov. 15	10	Nov. 7	10
Dec. 1	11	Dec. 20	11	Dec. 9	11	Nov. 28	11	Dec. 15	11	Dec. 7	11
Dec. 30	12	Jan. 19	12	Jan. 8	12	Dec. 27	12	Jan. 14	12	Jan. 6	12

Tab. 7.—Table for converting Taels into Dollars.

Amount	7 1/5 taels for 1000 dls.	7 1/7 taels for 1000 dls.	7 2/5 taels for 1000 dls.	Amount.	7 1/5 taels per 1000 dollars.	7 1/7 taels per 1000 dollars.	7 2/5 taels per 1000 dollars.
ma. cand.	cts. mills.	cts. mills.	cts. mills.	T. m. c.	D. cents.	D. cents.	D. cents.
1	.013	.013	.013	0.4.7	0.657	0.655	0.652
2	.027	.027	.027	0.4.8	0.671	0.669	0.666
3	.041	.041	.041	0.4.9	0.685	0.683	0.680
4	.055	.055	.055	0.5.0	0.699	0.697	0.694
5	.069	.069	.069	0.7.2	1.006	1.004	1.000
6	.083	.083	.083	T. 1.	1.398	1.394	1.388
7	.097	.097	.097	2	2.797	2.789	2.777
8	.111	.111	.111	3	4.195	4.183	4.166
9	.125	.125	.125	4	5.594	5.578	5.555
1 0	.139	.139	.138	5	6.993	6.973	6.944
1 1	.153	.153	.152	6	8.391	8.368	8.333
1 2	.167	.167	.166	7	9.790	9.762	9.722
1 3	.181	.181	.180	8	11.188	11.157	11.111
1 4	.195	.195	.194	9	12.587	12.552	12.500
1 5	.209	.209	.207	10	13.986	13.947	13.888
1 6	.223	.223	.221	11	15.384	15.341	15.277
1 7	.237	.237	.235	12	16.783	16.736	16.666
1 8	.251	.251	.250	13	18.181	18.131	18.055
1 9	.265	.265	.263	14	19.580	19.525	19.443
2 0	.279	.278	.277	15	20.979	20.920	20.833
2 1	.293	.292	.291	16	22.377	22.315	22.222
2 2	.307	.306	.305	17	23.776	23.709	23.611
2 3	.321	.320	.319	18	25.174	25.104	25.000
2 4	.335	.334	.333	19	26.573	26.499	26.388
2 5	.349	.348	.346	20	27.972	27.894	27.777
2 6	.363	.362	.360	21	29.370	29.288	29.166
2 7	.377	.376	.374	22	30.769	30.683	30.555
2 8	.391	.390	.388	23	32.167	32.078	31.944
2 9	.405	.404	.402	24	33.566	33.472	33.333
3 0	.419	.418	.416	25	34.965	34.867	34.722
3 1	.433	.432	.430	30	41.958	41.840	41.666
3 2	.447	.446	.444	40	55.944	55.788	55.555
3 3	.461	.460	.458	50	69.930	69.735	69.444
3 4	.475	.474	.472	75	104.895	104.602	104.166
3 5	.489	.488	.485	90	125.874	125.520	125.000
3 6	.503	.502	.500	100	139.860	139.470	138.888
3 7	.517	.516	.513	150	209.790	209.205	208.332
3 8	.531	.530	.527	200	279.720	278.940	277.777
3 9	.544	.543	.541	300	419.580	418.410	416.666
4 0	.559	.557	.555	400	559.440	557.880	555.555
4 1	.573	.571	.569	500	699.300	697.350	694.444
4 2	.587	.585	.583	600	838.160	836.820	833.333
4 3	.601	.599	.597	700	979.020	976.290	972.222
4 4	.615	.613	.611	800	1118.880	1115.760	1111.111
4 5	.629	.623	.624	900	1258.741	1255.230	1250.000
4 6	.643	.641	.638	1000	1398.601	1394.700	1388.888

Table 8.—Table for converting Dollars into Taels.

Amount	Tls. 715 a 1000 dls.	Tls. 717 a 1000 dls.	Tls. 720 a 1000 dls.	1300 cash to a dollar.	Amount.	715 taels per 1000 dollars.	717 taels per 1000 dollars.	720 taels per 1000 dollars.
Cents.	m c c	m c c	m c c	Cash.	Dollars.	T. m. c. c.	T. m. c. c.	T. m. c.
1	007	007	007	13	0.49	0.348	0.350	0.35
2	014	014	014	26	0.50	0.357	0.358	0.36
3	021	021	021	39	0.75	0.535	0.537	0.54
4	028	028	028	52	\$1	0.715	0.717	0.72
5	035	035	036	65	2	1.430	1.434	1.44
6	042	043	043	78	3	2.145	2.151	2.16
7	049	050	050	91	4	2.860	2.863	2.88
8	056	057	057	104	5	3.575	3.585	3.60
9	064	064	064	117	6	4.290	4.302	4.32
10	071	071	072	130	7	5.005	5.019	5.04
11	078	078	079	145	8	5.720	5.736	5.76
12	085	085	086	156	9	6.435	6.453	6.48
13	092	093	093	169	10	7.150	7.170	7.20
14	099	100	100	182	11	7.865	7.887	7.92
15	106	107	108	195	12	8.580	8.604	8.64
16	113	114	115	208	13	9.295	9.321	9.36
17	121	121	122	221	14	10.010	10.038	10.08
18	128	128	129	234	15	10.725	10.755	10.80
19	135	136	136	247	16	11.440	11.472	11.52
20	142	143	144	260	17	12.155	12.189	12.24
21	149	150	151	273	18	12.870	12.906	12.96
22	156	157	158	286	19	13.585	13.623	13.68
23	163	164	165	299	20	14.300	14.340	14.40
24	170	171	172	312	21	15.015	15.057	15.12
25	178	179	180	325	22	15.730	15.774	15.84
26	185	186	187	338	23	16.445	16.491	16.56
27	192	193	194	351	24	17.160	17.208	17.27
28	199	200	201	364	25	17.875	17.925	18.00
29	206	207	208	377	30	21.450	21.510	21.60
30	213	214	216	390	40	28.600	28.680	28.80
31	220	221	223	403	50	35.750	35.850	36.00
32	227	229	230	416	60	42.900	43.020	43.20
33	234	236	237	429	75	53.625	53.775	54.00
34	242	243	244	442	80	57.20	57.36	57.60
35	249	250	252	455	90	64.35	64.53	64.80
36	256	257	259	468	100	71.50	71.70	72.00
37	263	264	266	481	150	107.25	107.55	108.00
38	270	272	273	494	200	143.00	143.40	144.00
39	277	279	280	507	300	214.50	215.10	216.00
40	284	286	288	520	400	286.00	286.80	288.00
41	291	293	295	533	500	357.50	358.50	360.00
42	299	300	302	546	600	429.00	430.20	432.00
43	306	307	309	559	700	500.50	501.90	504.00
44	313	315	316	572	800	572.00	573.60	576.00
45	320	322	324	585	900	643.50	645.30	648.00
46	327	329	331	598	1000	715.00	717.00	720.00

Table 9.—Exchange Table of Rupees into Dollars.

At the par rate of 225 Company's Rupees per 100 Dollars.

Rs. A. P.	Dec.	Rs.	Dolls. cts.	Rs.	Dolls. cts.	Rps.	Dolls. cts.	Rups.	Dolls. cts.	Rupces.	Dolls. cts.
0 0 1	002 ¹ / ₂	2	0.888	29	12.888	56	24.888	83	36.888	1,000	444.444
0 0 2	004 ¹ / ₂	3	1.333	30	13.333	57	25.333	84	37.333	1,100	488.888
0 0 3	006 ¹ / ₂	4	1.777	31	13.777	58	25.777	85	37.777	1,200	533.333
0 0 4	008 ¹ / ₂	5	2.222	32	14.222	59	26.222	86	38.222	1,300	577.777
0 0 5	011 ¹ / ₂	6	2.666	33	14.666	60	26.666	87	38.666	1,400	622.222
0 0 6	013 ¹ / ₂	7	3.111	34	15.111	61	27.111	88	39.111	1,500	666.666
0 0 7	016 ¹ / ₂	8	3.555	35	15.555	62	27.555	89	39.555	1,600	711.111
0 0 8	018 ¹ / ₂	9	4.000	36	16.000	63	28.000	90	40.000	1,700	755.555
0 0 9	020 ¹ / ₂	10	4.444	37	16.444	64	28.444	91	40.444	1,800	800.000
0 0 10	023 ¹ / ₂	11	4.888	38	16.888	65	28.888	92	40.888	1,900	844.444
0 0 11	025 ¹ / ₂	12	5.333	39	17.333	66	28.333	93	41.333	2,000	888.888
0 1 0	027 ¹ / ₂	13	5.777	40	17.777	67	29.777	94	41.777	2,100	933.333
0 2 0	055 ¹ / ₂	14	6.222	41	18.222	68	30.222	95	42.222	2,200	977.777
0 3 0	083 ¹ / ₂	15	6.666	42	18.666	69	30.666	96	42.666	2,300	1022.222
0 4 0	111 ¹ / ₂	16	7.111	43	19.111	70	31.111	97	43.111	2,400	1066.666
0 5 0	138 ¹ / ₂	17	7.555	44	19.555	71	32.555	98	43.555	2,500	1111.111
0 6 0	166 ¹ / ₂	18	8.000	45	20.000	72	32.000	99	44.000	2,600	1155.555
0 7 0	194 ¹ / ₂	19	8.444	46	20.444	73	32.444	100	44.444	2,700	1200.000
0 8 0	222 ¹ / ₂	20	8.888	47	20.888	74	32.888	150	66.666	2,800	1244.444
0 9 0	249 ¹ / ₂	21	9.333	48	21.333	75	33.333	200	88.888	2,900	1288.888
0 10 0	277 ¹ / ₂	22	9.777	49	21.777	76	33.777	300	133.333	3,000	1333.333
0 11 0	305 ¹ / ₂	23	10.222	50	22.222	77	34.222	400	177.777	3,100	1377.777
0 12 0	333 ¹ / ₂	24	10.666	51	22.666	78	34.666	500	222.222	3,200	1422.222
0 13 0	360 ¹ / ₂	25	11.111	52	23.111	79	35.111	600	266.666	3,300	1466.666
0 14 0	388 ¹ / ₂	26	11.555	53	23.555	80	35.555	700	311.111	3,400	1511.111
0 15 0	416 ¹ / ₂	27	12.000	54	24.000	81	36.000	800	355.555	3,500	1555.555
1 0 0	444 ¹ / ₂	28	12.444	55	24.444	82	36.444	900	400.000	3,600	1600.000

Table 10.—Exchange Table of Dollars into Rupees.

At the par rate of 225 Company's Rupees per 100 Dollars.

Dec.	Pice.	Dec.	Ans. Pice.	Dls. cts.	Rs. A. P.	Dls.	Rs. A.	Dls.	Rs. Ans.	Dls.	Rs. Ans.	Dollars.	Rupees.
.001	0 ¹² ₅	.028	1 0 ¹² ₅	.10	0 3 7 ¹ ₂	19	42 12	46	103 8	73	164 4	100	225
.002	0 ¹² ₅	.029	1 0 ¹⁶ ₅	.20	0 7 2 ³ ₅	20	45 0	47	105 12	74	166 8	200	450
.003	1 ¹² ₅	.030	1 0 ¹⁶ ₅	.30	0 10 9 ³ ₅	21	47 4	48	108 0	75	168 12	300	675
.004	1 ¹² ₅	.031	1 1 ¹² ₅	.40	0 14 4 ³ ₅	22	49 8	49	110 4	76	171 0	400	900
.005	2 ⁴ ₅	.032	1 1 ¹² ₅	.50	1 2 0	23	51 12	50	112 8	77	173 4	500	1,125
.006	2 ⁴ ₅	.033	1 1 ¹² ₅	.60	1 5 7 ¹ ₂	24	54 0	51	114 12	78	175 8	600	1,350
.007	3 ¹² ₅	.034	1 2 ¹² ₅	.70	1 9 2 ³ ₅	25	56 4	52	117 0	79	177 12	700	1,575
.008	3 ¹² ₅	.035	1 3 ¹² ₅	.80	1 12 9 ³ ₅	26	58 8	53	119 4	80	180 4	800	1,800
.009	3 ¹² ₅	.036	1 3 ¹² ₅	.90	2 0 4	27	60 12	54	121 8	81	182 4	900	2,025
.010	4 ⁸ ₅	.037	1 3 ¹² ₅	1.00	2 4 0	28	63 0	55	123 12	82	184 8	1,000	2,250
.011	4 ⁸ ₅	.038	1 4 ¹² ₅	2.00	4 8 0	29	65 4	56	126 0	83	186 12	2,000	4,500
.012	5 ¹² ₅	.039	1 4 ¹² ₅	3.00	6 12 0	30	67 8	57	128 4	84	189 0	3,000	6,750
.013	5 ¹² ₅	.040	1 5 ¹² ₅	4.00	9 0 0	31	69 12	58	130 8	85	191 4	4,000	9,000
.014	6 ¹² ₅	.041	1 5 ¹² ₅	5.00	11 4 0	32	72 0	59	132 12	86	193 8	5,000	11,250
.015	6 ¹² ₅	.042	1 6 ¹² ₅	6.00	13 8 0	33	74 4	60	135 0	87	195 12	6,000	13,500
.016	6 ¹² ₅	.043	1 6 ¹² ₅	7.00	15 12 0	34	76 8	61	137 4	88	198 0	7,000	15,750
.017	7 ¹² ₅	.044	1 7 ¹² ₅	8.00	18 0 0	35	78 12	62	139 8	89	200 4	8,000	18,000
.018	7 ¹² ₅	.045	1 7 ¹² ₅	9.00	20 4 0	36	81 0	63	141 12	90	202 8	9,000	20,250
.019	8 ¹² ₅	.046	1 7 ¹² ₅	10.00	22 8 0	37	83 4	64	144 0	91	204 12	10,000	22,500
.020	8 ¹² ₅	.047	1 8 ¹² ₅	11.00	24 12 0	38	85 8	65	146 4	92	207 0	20,000	45,000
.021	9 ¹² ₅	.048	1 8 ¹² ₅	12.00	27 0 0	39	87 12	66	148 8	93	209 4	30,000	67,500
.022	9 ¹² ₅	.049	1 9 ¹² ₅	13.00	29 4 0	40	90 4	67	150 12	94	211 8	40,000	90,000
.023	9 ¹² ₅	.050	1 9 ¹² ₅	14.00	31 8 0	41	92 8	68	153 0	95	213 12	50,000	112,500
.024	10 ¹² ₅	.051	2 1 ¹² ₅	15.00	33 12 0	42	94 8	69	155 4	96	216 0	60,000	135,000
.025	10 ¹² ₅	.070	2 6 ⁶ ₅	16.00	36 0 0	43	96 12	70	157 8	97	218 4	70,000	157,500
.026	11 ¹² ₅	.080	2 10 ¹² ₅	17.00	38 4 0	44	99 0	71	159 12	98	220 8	80,000	180,000
.027	11 ¹² ₅	.090	3 2 ¹² ₅	18.00	40 8 0	45	101 4	72	162 0	99	222 12	90,000	202,500

*Taels reduced to English troy weight.**Values of various weights.*

Section 3.

COMPARISON OF WEIGHTS.

Tab. 11.—For converting Chinese money weight into English troy weight.

<i>Taels.</i>	<i>Oz. dwts. grs. dec.</i>	<i>Taels.</i>	<i>Oz. dwts. grs. dec.</i>	<i>Candar.</i>	<i>Dwts. grs. dec.</i>
100	120 16 0	9	10 17 10.56	9	2 4.1856
50	60 8 0	8	9 13 6.72	8	1 22.3872
25	30 4 0	7	8 9 2.88	7	1 16.5888
24	28 19 20.16	6	7 4 23.04	6	1 10.7904
23	27 15 16.32	5	6 0 19.20	5	1 4.9920
22	26 11 12.48	4	4 16 15.36	4	0 23.1936
21	25 7 8.64	3	3 12 11.52	3	0 17.3952
20	24 3 4.80	2	2 8 7.68	2	0 11.5968
19	22 19 0.96	1	1 4 3.84	1	0 5.7984
18	21 14 21.12	9Mace	1 1 17.856	Cash 9	0 5.21856
17	20 10 17.28	8	0 19 7.872	8	0 4.63872
16	19 6 13.44	7	0 16 21.888	7	0 4.05888
15	18 2 9.60	6	0 14 11.904	6	0 3.47904
14	16 18 5.76	5	0 12 1.920	5	0 2.89920
13	15 14 1.92	4	0 9 15.936	4	0 2.31936
12	14 9 22.08	3	0 7 5.952	3	0 1.73952
11	13 5 18.24	2	0 4 19.968	2	0 1.15968
10	12 1 14.40	1 or 10	0 2 9.984	1	0 0.57984

*Formulae for reducing Chinese, English and Indian weights.*One pound troy is equal to taels $9\frac{933}{1000}$ nearly.

One pound avoirdupois is equal to three fourths of a catty, or 12 tls.

One hundred weight is equal to 84 catties.

Ninety catties seda at Macao is equal to one pecul balança.

One ton is equal to 16 peculs 80 catties.

One ton is equal to 27.222 Indian maunds, or nearly $27\frac{1}{4}$ maunds.One Indian maund is $82\frac{3}{4}$ lbs. avoirdupois exactly.

One maund or 100 lbs. troy is equal to 993.446 taels.

One tola is equal to 3.221 taels.

One Bengal factory maund is equal to 56 catties.

One Bengal bazar maund is equal to 61.6 catties.

To convert taels into pounds troy.—Divide by ten, and to the quotient add two thirds of one per cent.*To convert peculs into pounds avoirdupois.*—Add a third to the number of catties.*To convert pounds avoirdupois into peculs.*—Subtract a quarter, and divide by 100.*To convert hundred weights into peculs.*—Multiply by 84 catties, and divide by 100.*To convert Bengal factory maunds into peculs.*—Multiply by 56, and divide by 100.

Rules for converting large weights. English, Chinese and Indian weights.

To convert peculs into hundred weights.—Multiply by 100, and divide by 84; or if minute exactness is not required, add one fifth, and from the result deduct 8 per mil.

To convert peculs into Bengal factory maunds.—Multiply by 100, and divide by 56; or if minute accuracy is not required, add three-quarters, and two per cent. upon the result.

To convert Bengal bazar maunds into peculs.—Multiply by 616, and divide by 1000.

To convert peculs into Bengal bazar maunds.—Multiply by 1000 and divide by 616; or if minute accuracy is not required, add $62\frac{1}{2}$ per cent.

To convert Indian weights into avoirdupois weight.—1. Multiply the weight in seers by 72, and divide by 35; the result will be the weight in pounds avoirdupois. Or 2, multiply the weight in maunds by 36, and divide by 49; the result will be the weight in pounds avoirdupois.

To convert avoirdupois weight into Indian weights.—1. Multiply the weight in pounds avoirdupois by 35, and divide by 72; the result will be the weight in seers. Or 2, multiply the weight in cwt. by 49, and divide by 36; the result will be the weight in maunds.

Tab. 12.—Chinese, Indian, and English large Weights compared.

A pecul is equal to	A cwt. is equal to				
5.333	4.480	Madras maunds of 8 vis, or		lbs. dec.	25.000
4.761	4.000	Bombay maunds of 40 Bombay seers, or			28.000
4.535	3.809	do. 42 do.			29.400
3.571	3.000	Surat maunds of 40 Surat seers, or			37.333
3.484	2.926	do.* 41 do.			38.266
3.401	2.857	do.† 42 do.			39.199
3.303	2.774	do. 43½ do.			40.366
3.246	2.727	do. 44 do.			41.066
1.785	1.500	Bengal factory maunds of 40 seers, or			74.666
1.623	1.363	Bengal bazar do. 40			82.133
			lbs	cwt.	pls. catt.
A Madras candy of 20 maunds is			500	4.464	3 75
A Bombay candy of 20			560	5.000	4 20
do. 21			588	5.250	4 41
do. 22		maunds, each	616	5.500	4 62
A Surat candy of 20		maund 40 seers, is	746½	6.666	5 60
do.‡ 21			784	7.000	5 88
do. 22			821½	7.333	6 16

* By this weight China sugar is sold at Bombay.

† By this weight Malwa opium is sold at Damaun and in the interior of India.

‡ By this weight cotton is sold at Bombay.

Silk Tables.

Rates of freight to be added.

Pro-forma Invoices.

Section 4.

COMPARISON OF PRICES.

Tab. 13.—Tables to ascertain the Cost of China Silk in London.

Extracted from the Tables by C. D. Snooke.

The following Tables have been calculated upon the basis of the data furnished by the annexed pro-forma accounts, which will be seen to embrace all the charges to which raw silk is liable, from its purchase in China, to its sale in London. When any of these charges are not incurred, a small deduction from the tabular price may be readily made; for instance, the omission of the charge for inspection in China will reduce the cost as given in the Tables, nearly one per cent., or 1d. on 8s. 9d.

The following small Table is appended, showing, to the nearest farthing, the charge upon each lb. at the different rates of freight, allowing, as a fair average, 7 bales of 103 lbs. each to one ton of 50 cubic feet; and from this Table the cost, as given in the others, can be corrected for any rate of freight.

At £3 per Ton of 50 feet....	1d. per lb.	At £5 per Ton of 50 feet. ...	2d. per lb.
„ £3 or £4 10s. „	1½d. „	„ £5 10s. or £7 „	2½d. „
„ £4 10s. „	1½d. „	„ £7 10s. „	2½d. „
„ £5 or £5 10s. „	1½d. „	„ £8 „	2½d. „

Pro-forma Invoice of 10 bales of Raw Silk,

SHIPPED FROM SHANGHAI TO LONDON.

		Dols.		cts.
ADC	10 bales TSATLEE,			
1 @ 10	weighing net 8 piculs, at 380 Dollars per picul.....		3040	00
	CHARGES.	Dols	cts.	
	Go-down rent, boat and coolie-hire.....	5	0	
	Mats, matting, and marking.....	2	65	
	Inspecting, 1 per cent.....	30	40	
	Fire insurance, ½ per cent.....	3	80	
			41	85
	Commission, 2½ per cent. on \$3081.85.		3081	85
			77	46
	Dollars	3159		31

Pro-forma account sale of the same.

		£	s.	d.	£	s.	d.
ADC	10 Bales TSATLEE,				931	10	0
1 @ 10	weighing 1035 lb., at 18s. per lb.....						
	CHARGES.	£	s.	d.			
	Insurance on £900, at 60s. 0/0, Policy £1 7s.	28	7	0			
	Freight on 73 ft. 6 in. at £7 10s. per 50 feet.	11	0	6			
	Dock charges, including warehouse rent...	5	18	6			
	Sale expenses, at 3d. per bale, 2s. 6d., Customs Entry 2s. 6d.	0	5	0			
	Fire insurance on £931 10s. at ¼ per cent. ..	2	6	7			
	Brokerage, „ ½ „ ..	4	13	2			
	Commission, „ 2½ „ ..	23	5	9	75	16	6
	Net Pro...				855	13	6

Giving an Exchange at 5s. 5d.

1066½ lb.

1035 lb.

31½ lb. loss in weight = 3 per cent.

EXCHANGE at 4s 2d			Cost per Picul.	EXCHANGE at 4s 6d		
FREIGHT £5 4s 50 feet.	FREIGHT £7 10s. 4s 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.		FREIGHT £5 4s 50 feet.	FREIGHT £7 10s. 4s 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.
4s lb. s. d.	4s lb. s. d.	4s lb. s. d.		4s lb. s. d.	4s lb. s. d.	4s lb. s. d.
7 7½	7 8½	7 9½	205	8 2½	8 3½	8 4½
7 9½	7 10½	7 11½	210	8 4½	8 5½	8 7
7 11½	8 0½	8 1½	215	8 7	8 8	8 9½
8 1½	8 2½	8 3½	220	8 9½	8 10½	8 11½
8 4	8 4½	8 6	225	8 11½	9 0½	9 2
8 6	8 7	8 8	230	9 2	9 3	9 4½
8 8½	8 9	8 10½	235	9 4½	9 5½	9 6½
8 10½	8 11½	9 0½	240	9 6½	9 7½	9 8½
9 0½	9 1½	9 2½	245	9 9	9 9½	9 11
9 2½	9 3½	9 4½	250	9 11½	10 0	10 1½
9 4½	9 5½	9 6½	255	10 1½	10 2½	10 3½
9 7	9 7½	9 8½	260	10 3½	10 4½	10 6
9 9	9 10	9 10½	265	10 6½	10 7	10 8½
9 11½	10 0	10 1	270	10 8½	10 9½	10 10½
10 1½	10 2½	10 3	275	10 10½	10 11½	11 0½
10 3½	10 4½	10 5½	280	11 1	11 2	11 3
10 5½	10 6½	10 7½	285	11 3½	11 4½	11 5½
10 7½	10 8½	10 9½	290	11 5½	11 6½	11 7½
10 9½	10 10½	10 11½	295	11 8	11 9	11 9½
11 0	11 1	11 1½	300	11 10½	11 11½	12 0½
11 2½	11 3	11 3½	305	12 0½	12 1½	12 2½
11 4½	11 5½	11 5½	310	12 3	12 3½	12 4½
11 6½	11 7½	11 8	315	12 5½	12 6½	12 7
11 8½	11 9½	11 10	320	12 7½	12 8½	12 9½
11 10½	11 11½	12 0½	325	12 9½	12 10½	12 11½
12 0½	12 1½	12 2½	330	13 0½	13 1	13 1½
12 3	12 3½	12 4½	335	13 2½	13 3½	13 4
12 5	12 6	12 6½	340	13 4½	13 5½	13 6½
12 7½	12 8½	12 8½	345	13 7	13 8	13 8½
12 9½	12 10½	12 10½	350	13 9½	13 10½	13 11
12 11½	13 0½	13 0½	355	13 11½	14 0½	14 1½
13 1½	13 2½	13 3	360	14 2	14 3	14 3½
13 3½	13 4½	13 5	365	14 4½	14 5½	14 5½
13 6	13 6½	13 7½	370	14 6½	14 7½	14 8
13 8	13 9	13 9½	375	14 9	14 9½	14 10½
13 10½	13 11	13 11½	380	14 11½	15 0½	15 0½
14 0½	14 1½	14 1½	385	15 1½	15 2½	15 3
14 2½	14 3½	14 3½	390	15 3½	15 4½	15 5½
14 4½	14 5½	14 5½	395	15 6½	15 7	15 7½
14 6½	14 7½	14 8	400	15 8½	15 9½	15 9½
14 9	14 9½	14 10	405	15 10½	15 11½	16 0
14 11	15 0	15 0	410	16 1	16 2	16 2½
15 1½	15 2	15 2½	415	16 3½	16 4½	16 4½
15 3½	15 4½	15 4½	420	16 5½	16 6½	16 6½
15 5½	15 6½	15 6½	425	16 8	16 9	16 9
15 7½	15 8½	15 8½	430	16 10½	16 11½	16 11½
15 9½	15 10½	15 10½	435	17 0½	17 1½	17 1½
15 11½	16 0½	16 0½	440	17 3	17 3½	17 4
16 2	16 3	16 2½	445	17 5½	17 6½	17 6½
16 4	16 5	16 5	450	17 7½	17 8½	17 8½

Deduct ½d. per lb. for Freight from Canton, at 90 dollars per 10 cwt.

EXCHANGE at 4s 7d			Cost per Picul.	EXCHANGE at 4s 8d		
FRIGHT £5 4 ¹ / ₂ 50 feet.	FREIGHT £7 10s. 4 ¹ / ₂ 50 ft.	Overland freight from Shanghai. \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.		FRIGHT £5 4 ¹ / ₂ 50 feet.	FREIGHT £7 10s. 4 ¹ / ₂ 50 ft.	Overland freight from Shanghai. \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.
4 ¹ / ₂ lb. s. d.	4 ¹ / ₂ lb. s. d.	4 ¹ / ₂ lb. s. d.	Dolls.	4 ¹ / ₂ lb. s. d.	4 ¹ / ₂ lb. s. d.	4 ¹ / ₂ lb. s. d.
8 4 ¹ / ₂	8 5	8 6 ³ / ₄	205	8 6	8 6 ³ / ₄	8 8 ¹ / ₂
8 6 ¹ / ₂	8 7 ¹ / ₂	8 9	210	8 8 ¹ / ₂	8 9 ¹ / ₂	8 10 ¹ / ₂
8 9	8 9 ³ / ₄	8 11 ¹ / ₄	215	8 10 ¹ / ₂	8 11 ¹ / ₂	9 1 ¹ / ₂
8 11 ¹ / ₂	9 0 ¹ / ₂	9 1 ¹ / ₂	220	9 1 ¹ / ₂	9 2	9 3 ¹ / ₂
9 1 ¹ / ₂	9 2 ¹ / ₂	9 4	225	9 3 ¹ / ₂	9 4 ¹ / ₂	9 6
9 4	9 4 ³ / ₄	9 6 ¹ / ₄	230	9 6	9 6 ³ / ₄	9 8 ¹ / ₄
9 6 ¹ / ₄	9 7 ¹ / ₄	9 8 ¹ / ₂	235	9 8 ¹ / ₄	9 9 ¹ / ₄	9 10 ¹ / ₄
9 8 ³ / ₄	9 9 ¹ / ₂	9 11	240	9 10 ¹ / ₂	9 11 ¹ / ₂	10 1
9 11	10 0	10 1 ¹ / ₂	245	10 1	10 2	10 3 ¹ / ₂
10 1 ¹ / ₂	10 2 ¹ / ₂	10 3 ¹ / ₂	250	10 3 ¹ / ₂	10 4 ¹ / ₂	10 5 ¹ / ₂
10 3 ¹ / ₂	10 4 ¹ / ₂	10 5 ¹ / ₂	255	10 6	10 6 ¹ / ₂	10 8 ¹ / ₂
10 6	10 7	10 8 ¹ / ₂	260	10 8 ¹ / ₂	10 9 ¹ / ₂	10 10 ¹ / ₂
10 8 ¹ / ₂	10 9 ¹ / ₂	10 10 ¹ / ₂	265	10 10 ¹ / ₂	10 11 ¹ / ₂	11 0 ¹ / ₂
10 10 ¹ / ₂	10 11 ¹ / ₂	11 0 ¹ / ₂	270	11 1	11 2	11 3 ¹ / ₂
11 1	11 2	11 3 ¹ / ₂	275	11 3 ¹ / ₂	11 4 ¹ / ₂	11 5 ¹ / ₂
11 3 ¹ / ₂	11 4 ¹ / ₂	11 5 ¹ / ₂	280	11 5 ¹ / ₂	11 6 ¹ / ₂	11 8
11 5 ¹ / ₂	11 6 ¹ / ₂	11 7 ¹ / ₂	285	11 8 ¹ / ₂	11 9 ¹ / ₂	11 10 ¹ / ₂
11 8 ¹ / ₂	11 9	11 10	290	11 10 ¹ / ₂	11 11 ¹ / ₂	12 0 ¹ / ₂
11 10 ¹ / ₂	11 11 ¹ / ₂	12 0 ¹ / ₂	295	12 1	12 2	12 3
12 0 ¹ / ₂	12 1 ¹ / ₂	12 2 ¹ / ₂	300	12 3 ¹ / ₂	12 4 ¹ / ₂	12 5 ¹ / ₂
12 3 ¹ / ₂	12 4 ¹ / ₂	12 5	305	12 5 ¹ / ₂	12 6 ¹ / ₂	12 7 ¹ / ₂
12 5 ¹ / ₂	12 6 ¹ / ₂	12 7 ¹ / ₂	310	12 8 ¹ / ₂	12 9 ¹ / ₂	12 10 ¹ / ₂
12 8	12 8 ³ / ₄	12 9 ³ / ₄	315	12 10 ¹ / ₂	12 11 ¹ / ₂	13 0 ¹ / ₂
12 10 ¹ / ₂	12 11 ¹ / ₂	13 0	320	13 1	13 2	13 2 ¹ / ₂
13 0 ¹ / ₂	13 1 ¹ / ₂	13 2 ¹ / ₂	325	13 3 ¹ / ₂	13 4 ¹ / ₂	13 5 ¹ / ₂
13 3	13 4	13 4 ³ / ₄	330	13 5 ¹ / ₂	13 6 ¹ / ₂	13 7 ¹ / ₂
13 5 ¹ / ₂	13 6 ¹ / ₂	13 7	335	13 8 ¹ / ₂	13 9	13 10
13 7 ¹ / ₂	13 8 ¹ / ₂	13 9 ¹ / ₂	340	13 10 ¹ / ₂	13 11 ¹ / ₂	14 0 ¹ / ₂
13 10	13 11	13 11 ¹ / ₂	345	14 1	14 2	14 2 ¹ / ₂
14 0 ¹ / ₂	14 1 ¹ / ₂	14 2	350	14 3 ¹ / ₂	14 4 ¹ / ₂	14 5
14 2 ¹ / ₂	14 3 ¹ / ₂	14 4 ¹ / ₂	355	14 5 ¹ / ₂	14 6 ¹ / ₂	14 7 ¹ / ₂
14 5	14 6	14 6 ¹ / ₂	360	14 8 ¹ / ₂	14 9	14 9 ¹ / ₂
14 7 ¹ / ₂	14 8 ¹ / ₂	14 9	365	14 10 ¹ / ₂	14 11 ¹ / ₂	15 0 ¹ / ₂
14 9 ¹ / ₂	14 10 ¹ / ₂	14 11 ¹ / ₂	370	15 1	15 1 ¹ / ₂	15 2 ¹ / ₂
15 0 ¹ / ₂	15 1	15 1 ¹ / ₂	375	15 3 ¹ / ₂	15 4 ¹ / ₂	15 4 ³ / ₄
15 2 ¹ / ₂	15 3 ¹ / ₂	15 4	380	15 5 ¹ / ₂	15 6 ¹ / ₂	15 7 ¹ / ₂
15 4 ¹ / ₂	15 5 ¹ / ₂	15 6 ¹ / ₂	385	15 8 ¹ / ₂	15 9	15 9 ¹ / ₂
15 7 ¹ / ₂	15 8	15 8 ¹ / ₂	390	15 10 ¹ / ₂	15 11 ¹ / ₂	16 0
15 9 ¹ / ₂	15 10 ¹ / ₂	15 10 ³ / ₄	395	16 1	16 1 ¹ / ₂	16 2 ¹ / ₂
16 0	16 0 ¹ / ₂	16 1 ¹ / ₂	400	16 3 ¹ / ₂	16 4 ¹ / ₂	16 4 ³ / ₄
16 2 ¹ / ₂	16 3 ¹ / ₂	16 3 ¹ / ₂	405	16 5 ¹ / ₂	16 6 ¹ / ₂	16 7
16 4 ¹ / ₂	16 5 ¹ / ₂	16 5 ¹ / ₂	410	16 8	16 9	16 9 ¹ / ₂
16 7	16 7 ¹ / ₂	16 8 ¹ / ₂	415	16 10 ¹ / ₂	16 11 ¹ / ₂	16 11 ¹ / ₂
16 9 ¹ / ₂	16 10 ¹ / ₂	16 10 ¹ / ₂	420	17 1	17 1 ¹ / ₂	17 2
16 11 ¹ / ₂	17 0 ¹ / ₂	17 0 ¹ / ₂	425	17 3 ¹ / ₂	17 4 ¹ / ₂	17 4 ¹ / ₂
17 2	17 3	17 3	430	17 5 ¹ / ₂	17 6 ¹ / ₂	17 6 ¹ / ₂
17 4 ¹ / ₂	17 5 ¹ / ₂	17 5 ¹ / ₂	435	17 8	17 9	17 9 ¹ / ₂
17 6 ¹ / ₂	17 7 ¹ / ₂	17 7 ¹ / ₂	440	17 10 ¹ / ₂	17 11 ¹ / ₂	17 11 ¹ / ₂
17 9	17 10	17 10	445	18 0 ¹ / ₂	18 1 ¹ / ₂	18 2
17 11 ¹ / ₂	18 0 ¹ / ₂	18 0 ¹ / ₂	450	18 3 ¹ / ₂	18 4 ¹ / ₂	18 4 ¹ / ₂

Deduct 1d. 4¹/₂ lb. for Freight from Canton, at 90 dollars 4¹/₂ 10 cwt.

EXCHANGE at 4s 9d			Cost per Picul.	EXCHANGE at 4s 10d		
FREIGHT £5 4 ^p 50 feet.	FREIGHT £7 10s. 4 ^p 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.		FREIGHT £5 4 ^p 50 feet.	FREIGHT £7 10s. 4 ^p 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.
4 ^p lb. s. d.	4 ^p lb. s. d.	4 ^p lb. s. d.	Dolls	4 ^p lb. s. d.	4 ^p lb. s. d.	4 ^p lb. s. d.
8 7 ³ / ₄	8 8 ¹ / ₂	8 10 ¹ / ₄	205	8 9 ¹ / ₂	8 10 ¹ / ₄	9 0 ¹ / ₄
8 10 ¹ / ₄	8 11	9 0 ³ / ₄	210	9 0	9 0 ³ / ₄	9 2 ¹ / ₄
9 0 ¹ / ₂	9 1 ¹ / ₂	9 3 ¹ / ₄	215	9 2 ¹ / ₄	9 3 ¹ / ₄	9 5
9 3	9 4	9 5 ¹ / ₂	220	9 5	9 5 ¹ / ₂	9 7 ¹ / ₂
9 5 ¹ / ₂	9 6 ¹ / ₄	9 8	225	9 7 ¹ / ₂	9 8 ¹ / ₄	9 10
9 8	9 8 ³ / ₄	9 10 ¹ / ₄	230	9 9 ¹ / ₂	9 10 ³ / ₄	10 0 ¹ / ₄
9 10 ¹ / ₄	9 11 ¹ / ₄	10 0 ³ / ₄	235	10 0 ¹ / ₄	10 1 ¹ / ₄	10 2 ³ / ₄
10 0 ³ / ₄	10 1 ¹ / ₂	10 3 ¹ / ₄	240	10 2 ¹ / ₄	10 3 ¹ / ₄	10 5 ¹ / ₄
10 3 ¹ / ₄	10 4	10 5 ¹ / ₂	245	10 5 ¹ / ₄	10 6 ¹ / ₄	10 7 ³ / ₄
10 5 ¹ / ₄	10 6 ¹ / ₄	10 8	250	10 7 ¹ / ₄	10 8 ³ / ₄	10 10 ¹ / ₄
10 8	10 9	10 10 ¹ / ₄	255	10 10 ¹ / ₄	10 11 ¹ / ₄	11 0 ³ / ₄
10 10 ¹ / ₄	10 11 ¹ / ₂	11 0 ³ / ₄	260	11 0 ³ / ₄	11 1 ¹ / ₄	11 3
11 1	11 1 ¹ / ₄	11 3 ¹ / ₄	265	11 3 ¹ / ₄	11 4 ¹ / ₄	11 5 ¹ / ₂
11 3 ¹ / ₄	11 4 ¹ / ₄	11 5 ¹ / ₂	270	11 5 ¹ / ₄	11 6 ¹ / ₄	11 8
11 5 ¹ / ₄	11 6 ³ / ₄	11 8	275	11 8 ¹ / ₄	11 9	11 10 ¹ / ₂
11 8 ¹ / ₄	11 9 ¹ / ₄	11 10 ¹ / ₄	280	11 10 ¹ / ₄	11 11 ¹ / ₂	12 1
11 10 ¹ / ₄	11 11 ¹ / ₂	12 0 ³ / ₄	285	12 1 ¹ / ₄	12 2	12 3 ¹ / ₄
12 1 ¹ / ₄	12 2	12 3 ¹ / ₄	290	12 3 ¹ / ₄	12 4 ¹ / ₄	12 5 ¹ / ₄
12 3 ¹ / ₄	12 4 ¹ / ₄	12 5 ¹ / ₂	295	12 6	12 7	12 8 ¹ / ₄
12 6	12 7	12 8	300	12 8 ¹ / ₄	12 9 ¹ / ₄	12 10 ¹ / ₄
12 8 ¹ / ₄	12 9 ¹ / ₄	12 10 ¹ / ₄	305	12 11	13 0	13 1
12 11	12 11 ³ / ₄	13 0 ³ / ₄	310	13 1 ¹ / ₂	13 2 ¹ / ₂	13 3 ¹ / ₄
13 1 ¹ / ₄	13 2 ¹ / ₄	13 3 ¹ / ₄	315	13 4	13 5	13 6
13 3 ¹ / ₄	13 4 ¹ / ₄	13 5 ¹ / ₂	320	13 6 ¹ / ₄	13 7 ¹ / ₂	13 8 ¹ / ₄
13 6 ¹ / ₄	13 7	13 8	325	13 9	13 10	13 11
13 8 ¹ / ₄	13 9 ¹ / ₂	13 10 ¹ / ₂	330	13 11 ¹ / ₄	14 0 ¹ / ₄	14 1 ¹ / ₄
13 11	14 0	14 1	335	14 2	14 2 ³ / ₄	14 3 ³ / ₄
14 1 ¹ / ₄	14 2 ¹ / ₄	14 3 ¹ / ₄	340	14 4 ¹ / ₄	14 5 ¹ / ₄	14 6 ¹ / ₄
14 4	14 4 ³ / ₄	14 5 ¹ / ₂	345	14 7	14 8 ¹ / ₄	14 8 ³ / ₄
14 6 ¹ / ₄	14 7 ¹ / ₄	14 8	350	14 9 ¹ / ₂	14 10 ¹ / ₄	14 11 ¹ / ₄
14 8 ¹ / ₄	14 9 ¹ / ₄	14 10 ¹ / ₂	355	14 11 ³ / ₄	15 0 ³ / ₄	15 1 ¹ / ₂
14 11 ¹ / ₄	15 0 ¹ / ₄	15 1	360	15 2 ¹ / ₄	15 3 ¹ / ₄	15 4
15 1 ¹ / ₄	15 2 ¹ / ₄	15 3 ¹ / ₄	365	15 4 ¹ / ₄	15 5 ¹ / ₂	15 6 ¹ / ₄
15 4 ¹ / ₄	15 5	15 5 ¹ / ₂	370	15 7 ¹ / ₄	15 8 ¹ / ₄	15 9
15 6 ¹ / ₄	15 7 ¹ / ₂	15 8	375	15 9 ¹ / ₄	15 10 ¹ / ₂	15 11 ¹ / ₂
15 9	15 10	15 10 ¹ / ₂	380	16 0 ¹ / ₄	16 1 ¹ / ₄	16 1 ³ / ₄
15 11 ¹ / ₄	16 0 ¹ / ₄	16 1	385	16 2 ¹ / ₄	16 3 ¹ / ₄	16 4 ¹ / ₄
16 1 ¹ / ₄	16 2 ¹ / ₄	16 3 ¹ / ₄	390	16 5 ¹ / ₄	16 6	16 6 ¹ / ₄
16 4 ¹ / ₄	16 5 ¹ / ₄	16 5 ¹ / ₂	395	16 7 ¹ / ₄	16 8 ¹ / ₄	16 9 ¹ / ₄
16 6 ¹ / ₄	16 7 ¹ / ₄	16 8 ¹ / ₄	400	16 10 ¹ / ₄	16 11	16 11 ¹ / ₄
16 9 ¹ / ₄	16 10	16 10 ¹ / ₂	405	17 0 ³ / ₄	17 1 ¹ / ₂	17 2
16 11 ¹ / ₄	17 0 ³ / ₄	17 1	410	17 3 ¹ / ₄	17 4	17 4 ¹ / ₂
17 2	17 3	17 3 ¹ / ₄	415	17 5 ¹ / ₄	17 6 ¹ / ₄	17 7
17 4 ¹ / ₄	17 5 ¹ / ₂	17 5 ³ / ₄	420	17 8	17 9	17 9 ¹ / ₂
17 7	17 7 ³ / ₄	17 8 ¹ / ₄	425	17 10 ¹ / ₄	17 11 ¹ / ₂	17 11 ³ / ₄
17 9 ¹ / ₄	17 10 ¹ / ₄	17 10 ¹ / ₂	430	18 1	18 2	18 2 ¹ / ₄
17 11 ¹ / ₄	18 0 ³ / ₄	18 1	435	18 3 ¹ / ₄	18 4 ¹ / ₄	18 4 ³ / ₄
18 2 ¹ / ₄	18 3 ¹ / ₄	18 3 ¹ / ₂	440	18 6	18 7	18 7 ¹ / ₄
18 4 ¹ / ₄	18 5 ¹ / ₄	18 5 ¹ / ₂	445	18 8 ¹ / ₄	18 9 ¹ / ₄	18 9 ³ / ₄
18 7	18 8	18 8 ¹ / ₄	450	18 11	19 0	19 0

Deduct 1^d per lb. for freight from Canton, at \$90 per 10 cwt.

EXCHANGE at 4s 11d				Cost per Cwt.	EXCHANGE at 5s			
FREIGHT £5 4s 50 feet.	FREIGHT £7 10s. 4s 50 ft.	Overland freight from Shanghai. \$100 per 10 Cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.			FREIGHT £5 4s 50 feet.	FREIGHT £7 10s. 4s 50 ft.	Overland freight from Shanghai. \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.	
4s. lb. s. d.	4s. lb. s. d.	4s. lb. s. d.		Dolls	4s. lb. s. d.	4s. lb. s. d.	4s. lb. s. d.	
8 11½	9 0½	9 2		205	9 1	9 2	9 3¾	
9 1¾	9 2¾	9 4½		210	9 3½	9 4½	9 6¼	
9 4½	9 5½	9 7		215	9 6½	9 7	9 9	
9 6¾	9 7¾	9 9½		220	9 8¾	9 9½	9 11½	
9 9½	9 10½	10 0		225	9 11½	10 0½	10 2	
9 11½	10 0½	10 2½		230	10 1½	10 2½	10 4½	
10 2½	10 3½	10 5		235	10 4½	10 5½	10 7	
10 5	10 5½	10 7½		240	10 7	10 7¾	10 9½	
10 7½	10 8½	10 10		245	10 9½	10 10½	11 0	
10 10	10 10½	11 0½		250	11 0	11 1	11 2½	
11 0½	11 1½	11 3		255	11 2½	11 3½	11 5½	
11 3	11 4	11 5½		260	11 5½	11 6	11 7¾	
11 5½	11 6½	11 7¾		265	11 7½	11 8¾	11 10½	
11 8	11 9	11 10½		270	11 10½	11 11½	12 0¾	
11 10½	11 11½	12 0¾		275	12 1	12 1½	12 3¼	
12 1	12 2	12 3¼		280	12 3¼	12 4½	12 5¾	
12 3¼	12 4½	12 5¾		285	12 6	12 7	12 8¾	
12 6	12 7	12 8¾		290	12 8½	12 9½	12 10¾	
12 8¾	12 9½	12 10¾		295	12 11½	13 0	13 1½	
12 11½	13 0	13 1½		300	13 1½	13 2¾	13 4	
13 1½	13 2½	13 3¾		305	13 4½	13 5½	13 6¾	
13 4½	13 5	13 6¾		310	13 6½	13 7¾	13 9	
13 6¾	13 7¾	13 8¾		315	13 9½	13 10½	13 11½	
13 9½	13 10½	13 11½		320	14 0	14 1	14 2	
13 11½	14 0½	14 1½		325	14 2½	14 3½	14 4½	
14 2½	14 3½	14 4½		330	14 5	14 6	14 7½	
14 4½	14 5½	14 6¾		335	14 7½	14 8½	14 9½	
14 7½	14 8½	14 9½		340	14 10½	14 11½	15 0½	
14 9½	14 10½	14 11½		345	15 0½	15 1½	15 2½	
15 0½	15 1½	15 2½		350	15 3½	15 4½	15 5½	
15 3	15 3¾	15 4¾		355	15 6	15 6¾	15 7¾	
15 5½	15 6½	15 7½		360	15 8½	15 9½	15 10½	
15 8	15 8¾	15 9¾		365	15 11	16 0	16 0¾	
15 10½	15 11½	16 0½		370	16 1½	16 2½	16 3¾	
16 1	16 2	16 2¾		375	16 4½	16 5	16 6	
16 3½	16 4½	16 5½		380	16 6¾	16 7¾	16 8¾	
16 6	16 7	16 7¾		385	16 9½	16 10½	16 11	
16 8½	16 9½	16 10½		390	17 0	17 0¾	17 1½	
16 11	17 0	17 0½		395	17 2½	17 3½	17 4	
17 1½	17 2½	17 3		400	17 5	17 6	17 6½	
17 4½	17 5	17 5½		405	17 7½	17 8½	17 9	
17 6¾	17 7½	17 8		410	17 10½	17 11	17 11½	
17 9½	17 10	17 10½		415	18 0¾	18 1½	18 2½	
17 11½	18 0½	18 1		420	18 3½	18 4½	18 4¾	
18 2½	18 3	18 3½		425	18 5½	18 6¾	18 7½	
18 4½	18 5½	18 6		430	18 8½	18 9½	18 9¾	
18 7½	18 8½	18 8½		435	18 11	19 0	19 0½	
18 9½	18 10½	18 11		440	19 1½	19 2½	19 2¾	
19 0½	19 1½	19 1½		445	19 4	19 5	19 5½	
19 2½	19 3½	19 4		450	19 6¾	19 7½	19 8	

Deduct 3d per lb. for freight from Canton, at \$90 per 10 cwt.

Deduct ½d per lb. for freight from Canton, at \$30 per 10 cwt.

EXCHANGE at 5s 1d			Cost per Picul.	EXCHANGE at 5s 2d		
FREIGHT £5 4 ^p 50 feet.	FREIGHT £7 10s. 4 ^p 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.		FREIGHT £5 4 ^p 50 feet.	FREIGHT £7 10s. 4 ^p 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.
4 ^p lb. s. d.	4 ^p lb. s. d.	4 ^p lb. s. d.		4 ^p lb. s. d.	4 ^p lb. s. d.	4 ^p lb. s. d.
9 2 ³ ₄	9 3 ³ ₄	9 5 ³ ₄	205	9 4 ¹ ₂	9 5 ¹ ₂	9 7 ¹ ₂
9 5 ¹ ₄	9 6 ¹ ₄	9 8 ¹ ₄	210	9 7 ¹ ₄	9 8	9 10
9 8	9 9	9 10 ³ ₄	215	9 9 ¹ ₄	9 10 ³ ₄	10 0 ³ ₄
9 10 ¹ ₂	9 11 ¹ ₂	10 1 ¹ ₂	220	10 0 ¹ ₂	10 1 ¹ ₂	10 3 ¹ ₄
10 1 ¹ ₄	10 2	10 4	225	10 3	10 4	10 6
10 3 ¹ ₄	10 4 ³ ₄	10 6 ¹ ₂	230	10 5 ³ ₄	10 6 ³ ₄	10 8 ¹ ₂
10 6 ¹ ₂	10 7 ¹ ₄	10 9	235	10 8 ¹ ₂	10 9 ¹ ₂	10 11 ¹ ₂
10 9	10 10	10 11 ³ ₄	240	10 11	11 0	11 1 ¹ ₂
10 11 ¹ ₂	11 0 ¹ ₂	11 2 ¹ ₄	245	11 1 ¹ ₄	11 2 ¹ ₄	11 4 ¹ ₂
11 2 ¹ ₄	11 3 ¹ ₄	11 4 ³ ₄	250	11 4 ¹ ₄	11 5 ¹ ₄	11 7
11 4 ³ ₄	11 5 ³ ₄	11 7 ¹ ₂	255	11 7	11 8	11 9 ³ ₄
11 7 ¹ ₂	11 8 ¹ ₄	11 10	260	11 9 ³ ₄	11 10 ¹ ₂	12 0 ¹ ₂
11 10	11 11	12 0 ¹ ₂	265	12 0 ¹ ₂	12 1 ¹ ₂	12 3
12 0 ¹ ₂	12 1 ¹ ₂	12 3 ¹ ₄	270	12 3	12 4	12 5 ¹ ₂
12 3 ¹ ₄	12 4 ¹ ₂	12 5 ³ ₄	275	12 5 ¹ ₂	12 6 ¹ ₂	12 8
12 5 ³ ₄	12 6 ³ ₄	12 8 ¹ ₂	280	12 8 ¹ ₂	12 9 ¹ ₂	12 10 ³ ₄
12 8 ¹ ₂	12 9 ¹ ₂	12 10 ³ ₄	285	12 11	12 11 ³ ₄	13 1 ¹ ₂
12 11	13 0	13 1 ¹ ₂	290	13 1 ¹ ₂	13 2 ¹ ₄	13 4
13 1 ¹ ₂	13 2 ¹ ₂	13 4	295	13 4 ¹ ₂	13 5 ¹ ₂	13 6 ¹ ₂
13 4 ¹ ₂	13 5 ¹ ₂	13 6 ¹ ₂	300	13 7	13 7 ¹ ₂	13 9 ¹ ₂
13 7	13 7 ³ ₄	13 9 ¹ ₂	305	13 9 ¹ ₂	13 10 ¹ ₂	13 11 ³ ₄
13 9 ¹ ₂	13 10 ¹ ₂	13 11 ³ ₄	310	14 0 ¹ ₂	14 1	14 2 ¹ ₂
14 0 ¹ ₂	14 1	14 2 ¹ ₂	315	14 2 ¹ ₂	14 3 ¹ ₄	14 5
14 2 ¹ ₂	14 3 ¹ ₄	14 4 ³ ₄	320	14 5 ¹ ₂	14 6 ¹ ₂	14 7 ³ ₄
14 5 ¹ ₂	14 6 ¹ ₂	14 7 ¹ ₂	325	14 8 ¹ ₂	14 9	14 10 ¹ ₂
14 8	14 8 ³ ₄	14 10	330	14 10 ³ ₄	14 11 ¹ ₂	15 1
14 10 ¹ ₂	14 11 ¹ ₂	15 0 ¹ ₂	335	15 1 ¹ ₂	15 2 ¹ ₄	15 3 ¹ ₄
15 1 ¹ ₂	15 2	15 3 ¹ ₄	340	15 4	15 5	15 6 ¹ ₂
15 3 ¹ ₄	15 4 ³ ₄	15 5 ³ ₄	345	15 6 ¹ ₂	15 7 ³ ₄	15 8 ³ ₄
15 6 ¹ ₂	15 7 ¹ ₂	15 8 ¹ ₂	350	15 9	15 10 ¹ ₂	15 11 ¹ ₂
15 9	15 10	15 11	355	16 0	16 1	16 2
15 11 ¹ ₂	16 0 ¹ ₂	16 1 ¹ ₂	360	16 2 ³ ₄	16 3 ¹ ₄	16 4 ¹ ₂
16 2 ¹ ₂	16 3	16 4	365	16 5 ¹ ₂	16 6 ¹ ₂	16 7 ¹ ₂
16 4 ³ ₄	16 5 ³ ₄	16 6 ¹ ₂	370	16 8	16 9	16 9 ³ ₄
16 7 ¹ ₂	16 8 ¹ ₂	16 9 ¹ ₂	375	16 10 ³ ₄	16 11 ¹ ₂	17 0 ¹ ₂
16 10	16 11	16 11 ³ ₄	380	17 1 ¹ ₂	17 2 ¹ ₄	17 3
17 0 ³ ₄	17 1 ¹ ₂	17 2 ¹ ₄	385	17 4	17 4 ³ ₄	17 5 ³ ₄
17 3 ¹ ₄	17 4 ¹ ₂	17 5	390	17 6 ¹ ₂	17 7 ¹ ₂	17 8 ¹ ₂
17 5 ³ ₄	17 6 ³ ₄	17 7 ¹ ₂	395	17 9 ¹ ₂	17 10 ¹ ₂	17 11
17 8 ¹ ₂	17 9 ¹ ₂	17 10	400	18 0	18 0 ³ ₄	18 1 ¹ ₂
17 11	18 0	18 0 ³ ₄	405	18 2 ¹ ₂	18 3 ¹ ₄	18 4 ¹ ₂
18 1 ¹ ₂	18 2 ¹ ₂	18 3 ¹ ₄	410	18 5 ¹ ₂	18 6	18 6 ³ ₄
18 4 ¹ ₂	18 5 ¹ ₂	18 5 ³ ₄	415	18 7 ³ ₄	18 8 ¹ ₂	18 9 ¹ ₂
18 7	18 7 ³ ₄	18 8 ¹ ₂	420	18 10 ¹ ₂	18 11 ¹ ₂	19 0
18 9 ¹ ₂	18 10 ¹ ₂	18 11	425	19 1 ¹ ₂	19 2	19 2 ³ ₄
19 0	19 1	19 1 ¹ ₂	430	19 3 ¹ ₄	19 4 ³ ₄	19 5 ¹ ₂
19 2 ³ ₄	19 3 ¹ ₄	19 4	435	19 6 ¹ ₂	19 7 ¹ ₂	19 7 ³ ₄
19 5 ¹ ₂	19 6 ¹ ₂	19 6 ³ ₄	440	19 9	19 10	19 10 ¹ ₂
19 8	19 8 ³ ₄	19 9 ¹ ₂	445	19 11 ³ ₄	20 0 ³ ₄	20 1
19 10 ¹ ₂	19 11 ¹ ₂	19 11 ³ ₄	450	20 2 ¹ ₂	20 3 ¹ ₄	20 3 ³ ₄

Deduct 1d. per lb. for Freight from Canton, at 90 dollars per 10 cwt.

EXCHANGE at 5s 3d			Cost per Picul.	EXCHANGE at 5s 4d		
FREIGHT £5 $\frac{1}{2}$ 50 feet.	FREIGHT £7 10s. $\frac{1}{2}$ 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.		FREIGHT £5 $\frac{1}{2}$ 50 feet.	FREIGHT £7 10s. $\frac{1}{2}$ 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.
$\frac{1}{2}$ lb. s. d.	$\frac{1}{2}$ lb. s. d.	$\frac{1}{2}$ lb. s. d.	Dolls.	$\frac{1}{2}$ lb. s. d.	$\frac{1}{2}$ lb. s. d.	$\frac{1}{2}$ lb. s. d.
9 6 $\frac{1}{2}$	9 7 $\frac{1}{2}$	9 9 $\frac{1}{2}$	205	9 8	9 9	9 11 $\frac{1}{2}$
9 9	9 10	10 0	210	9 10 $\frac{1}{2}$	9 11 $\frac{1}{2}$	10 1 $\frac{1}{2}$
9 11 $\frac{1}{2}$	10 0 $\frac{1}{2}$	10 2 $\frac{1}{2}$	215	10 1 $\frac{1}{2}$	10 2 $\frac{1}{2}$	10 4 $\frac{1}{2}$
10 2 $\frac{1}{2}$	10 3 $\frac{1}{2}$	10 5 $\frac{1}{2}$	220	10 4 $\frac{1}{2}$	10 5 $\frac{1}{2}$	10 7 $\frac{1}{2}$
10 5	10 6	10 8	225	10 7	10 8	10 10
10 7 $\frac{1}{2}$	10 8 $\frac{1}{2}$	10 10 $\frac{1}{2}$	230	10 9 $\frac{1}{2}$	10 10 $\frac{1}{2}$	11 0 $\frac{1}{2}$
10 10 $\frac{1}{2}$	10 11 $\frac{1}{2}$	11 1 $\frac{1}{2}$	235	11 0 $\frac{1}{2}$	11 1 $\frac{1}{2}$	11 3 $\frac{1}{2}$
11 1 $\frac{1}{2}$	11 2	11 4	240	11 3 $\frac{1}{2}$	11 4	11 6
11 3 $\frac{1}{2}$	11 4 $\frac{1}{2}$	11 6 $\frac{1}{2}$	245	11 6	11 6 $\frac{1}{2}$	11 8 $\frac{1}{2}$
11 6 $\frac{1}{2}$	11 7 $\frac{1}{2}$	11 9 $\frac{1}{2}$	250	11 8 $\frac{1}{2}$	11 9 $\frac{1}{2}$	11 11 $\frac{1}{2}$
11 9 $\frac{1}{2}$	11 10	12 0	255	11 11 $\frac{1}{2}$	12 0 $\frac{1}{2}$	12 2 $\frac{1}{2}$
12 0	12 0 $\frac{1}{2}$	12 2 $\frac{1}{2}$	260	12 2 $\frac{1}{2}$	12 3	12 4 $\frac{1}{2}$
12 2 $\frac{1}{2}$	12 3 $\frac{1}{2}$	12 5 $\frac{1}{2}$	265	12 4 $\frac{1}{2}$	12 5 $\frac{1}{2}$	12 7 $\frac{1}{2}$
12 5 $\frac{1}{2}$	12 6 $\frac{1}{2}$	12 8	270	12 7 $\frac{1}{2}$	12 8 $\frac{1}{2}$	12 10 $\frac{1}{2}$
12 8	12 9	12 10 $\frac{1}{2}$	275	12 10 $\frac{1}{2}$	12 11 $\frac{1}{2}$	13 1
12 10 $\frac{1}{2}$	12 11 $\frac{1}{2}$	13 1 $\frac{1}{2}$	280	13 1	13 2	13 3 $\frac{1}{2}$
13 1 $\frac{1}{2}$	13 2 $\frac{1}{2}$	13 3 $\frac{1}{2}$	285	13 3 $\frac{1}{2}$	13 4 $\frac{1}{2}$	13 6 $\frac{1}{2}$
13 4	13 5	13 6 $\frac{1}{2}$	290	13 6 $\frac{1}{2}$	13 7 $\frac{1}{2}$	13 9
13 6 $\frac{1}{2}$	13 7 $\frac{1}{2}$	13 9 $\frac{1}{2}$	295	13 9 $\frac{1}{2}$	13 10 $\frac{1}{2}$	13 11 $\frac{1}{2}$
13 9 $\frac{1}{2}$	13 10 $\frac{1}{2}$	13 11 $\frac{1}{2}$	300	14 0	14 1	14 2 $\frac{1}{2}$
14 0 $\frac{1}{2}$	14 1	14 2 $\frac{1}{2}$	305	14 2 $\frac{1}{2}$	14 3 $\frac{1}{2}$	14 5 $\frac{1}{2}$
14 2 $\frac{1}{2}$	14 3 $\frac{1}{2}$	14 5 $\frac{1}{2}$	310	14 5 $\frac{1}{2}$	14 6 $\frac{1}{2}$	14 8
14 5 $\frac{1}{2}$	14 6 $\frac{1}{2}$	14 7 $\frac{1}{2}$	315	14 8 $\frac{1}{2}$	14 9 $\frac{1}{2}$	14 10 $\frac{1}{2}$
14 8 $\frac{1}{2}$	14 9 $\frac{1}{2}$	14 10 $\frac{1}{2}$	320	14 11	15 0	15 1 $\frac{1}{2}$
14 11	14 11 $\frac{1}{2}$	15 1 $\frac{1}{2}$	325	15 1 $\frac{1}{2}$	15 2 $\frac{1}{2}$	15 4
15 1 $\frac{1}{2}$	15 2 $\frac{1}{2}$	15 3 $\frac{1}{2}$	330	15 4 $\frac{1}{2}$	15 5 $\frac{1}{2}$	15 6 $\frac{1}{2}$
15 4 $\frac{1}{2}$	15 5 $\frac{1}{2}$	15 6 $\frac{1}{2}$	335	15 7 $\frac{1}{2}$	15 8	15 9 $\frac{1}{2}$
15 7	15 8	15 9	340	15 10	15 10 $\frac{1}{2}$	16 0
15 9 $\frac{1}{2}$	15 10 $\frac{1}{2}$	15 11 $\frac{1}{2}$	345	16 0 $\frac{1}{2}$	16 1 $\frac{1}{2}$	16 2 $\frac{1}{2}$
16 0 $\frac{1}{2}$	16 1 $\frac{1}{2}$	16 2 $\frac{1}{2}$	350	16 3 $\frac{1}{2}$	16 4 $\frac{1}{2}$	16 5 $\frac{1}{2}$
16 3	16 4	16 5	355	16 6	16 7	16 8 $\frac{1}{2}$
16 5 $\frac{1}{2}$	16 6 $\frac{1}{2}$	16 7 $\frac{1}{2}$	360	16 8 $\frac{1}{2}$	16 9 $\frac{1}{2}$	16 11
16 8 $\frac{1}{2}$	16 9 $\frac{1}{2}$	16 10 $\frac{1}{2}$	365	16 11 $\frac{1}{2}$	17 0 $\frac{1}{2}$	17 1 $\frac{1}{2}$
16 11 $\frac{1}{2}$	17 0	17 1	370	17 2 $\frac{1}{2}$	17 3 $\frac{1}{2}$	17 4 $\frac{1}{2}$
17 1 $\frac{1}{2}$	17 2 $\frac{1}{2}$	17 3 $\frac{1}{2}$	375	17 5	17 6	17 7
17 4 $\frac{1}{2}$	17 5 $\frac{1}{2}$	17 6 $\frac{1}{2}$	380	17 7 $\frac{1}{2}$	17 8 $\frac{1}{2}$	17 9 $\frac{1}{2}$
17 7 $\frac{1}{2}$	17 8 $\frac{1}{2}$	17 9	385	17 10 $\frac{1}{2}$	17 11 $\frac{1}{2}$	18 0 $\frac{1}{2}$
17 10	17 10 $\frac{1}{2}$	17 11 $\frac{1}{2}$	390	18 1 $\frac{1}{2}$	18 2 $\frac{1}{2}$	18 3
18 0 $\frac{1}{2}$	18 1 $\frac{1}{2}$	18 2 $\frac{1}{2}$	395	18 4	18 5	18 5 $\frac{1}{2}$
18 3 $\frac{1}{2}$	18 4 $\frac{1}{2}$	18 5	400	18 6 $\frac{1}{2}$	18 7 $\frac{1}{2}$	18 8 $\frac{1}{2}$
18 6	18 7	18 7 $\frac{1}{2}$	405	18 9 $\frac{1}{2}$	18 10 $\frac{1}{2}$	18 11 $\frac{1}{2}$
18 8 $\frac{1}{2}$	18 9 $\frac{1}{2}$	18 10 $\frac{1}{2}$	410	19 0 $\frac{1}{2}$	19 1	19 2
18 11 $\frac{1}{2}$	19 0 $\frac{1}{2}$	19 1	415	19 3	19 3 $\frac{1}{2}$	19 4 $\frac{1}{2}$
19 2	19 3	19 3 $\frac{1}{2}$	420	19 5 $\frac{1}{2}$	19 6 $\frac{1}{2}$	19 7 $\frac{1}{2}$
19 4 $\frac{1}{2}$	19 5 $\frac{1}{2}$	19 6 $\frac{1}{2}$	425	19 8 $\frac{1}{2}$	19 9 $\frac{1}{2}$	19 10
19 7 $\frac{1}{2}$	19 8 $\frac{1}{2}$	19 9	430	19 11 $\frac{1}{2}$	20 0	20 0 $\frac{1}{2}$
19 10 $\frac{1}{2}$	19 11	19 11 $\frac{1}{2}$	435	20 2	20 2 $\frac{1}{2}$	20 3 $\frac{1}{2}$
20 0 $\frac{1}{2}$	20 1 $\frac{1}{2}$	20 2 $\frac{1}{2}$	440	20 4 $\frac{1}{2}$	20 5 $\frac{1}{2}$	20 6
20 3 $\frac{1}{2}$	20 4 $\frac{1}{2}$	20 5	445	20 7 $\frac{1}{2}$	20 8 $\frac{1}{2}$	20 8 $\frac{1}{2}$
20 6 $\frac{1}{2}$	20 7 $\frac{1}{2}$	20 7 $\frac{1}{2}$	450	20 10	20 11	20 11 $\frac{1}{2}$

Deduct $\frac{1}{2}$ d. $\frac{1}{2}$ lb. for Freight from Canton, at 90 dollars $\frac{1}{2}$ 10 cwt.

EXCHANGE at 5s 5d			Cost per Picul.	EXCHANGE at 5s 6d		
FREIGHT £5 4 ^p 50 feet.	FREIGHT £7 10s. 4 ^p 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.		FREIGHT £5 4 ^p 50 feet.	FREIGHT £7 10s. 4 ^p 50 ft.	Overland freight from Shanghai, \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.
4 ^p lb. s. d.	4 ^p lb. s. d.	4 ^p lb. s. d.		4 ^p lb. s. d.	4 ^p lb. s. d.	4 ^p lb. s. d.
9 9 ³ / ₄	9 10 ³ / ₄	10 1	205	9 11 ¹ / ₂	10 0 ¹ / ₂	10 2 ³ / ₄
10 0 ¹ / ₂	10 1 ¹ / ₂	10 3 ³ / ₄	210	10 2 ¹ / ₂	10 3 ³ / ₄	10 5 ¹ / ₂
10 3 ¹ / ₄	10 4 ¹ / ₄	10 6 ¹ / ₂	215	10 5 ¹ / ₄	10 6	10 8 ¹ / ₂
10 6 ¹ / ₄	10 7	10 9 ¹ / ₄	220	10 8	10 9	10 11 ¹ / ₄
10 9	10 9 ³ / ₄	11 0	225	10 10 ³ / ₄	10 11 ³ / ₄	11 2
10 11 ³ / ₄	11 0 ¹ / ₂	11 2 ³ / ₄	230	11 1 ³ / ₄	11 2 ¹ / ₂	11 4 ³ / ₄
11 2 ¹ / ₂	11 3 ¹ / ₂	11 5 ¹ / ₂	235	11 4 ¹ / ₂	11 5 ¹ / ₂	11 7 ¹ / ₂
11 5 ¹ / ₄	11 6 ¹ / ₄	11 8 ¹ / ₄	240	11 7 ¹ / ₄	11 8 ¹ / ₄	11 10 ¹ / ₄
11 8	11 9	11 11	245	11 10 ¹ / ₄	11 11	12 1
11 10 ³ / ₄	11 11 ³ / ₄	12 1 ³ / ₄	250	12 1	12 1 ³ / ₄	12 4
12 1 ¹ / ₂	12 2 ¹ / ₂	12 4 ¹ / ₂	255	12 3 ³ / ₄	12 4 ³ / ₄	12 6 ³ / ₄
12 4 ¹ / ₄	12 5 ¹ / ₄	12 7 ¹ / ₄	260	12 6 ¹ / ₂	12 7 ¹ / ₂	12 9 ¹ / ₂
12 7 ¹ / ₄	12 8	12 10	265	12 9 ¹ / ₄	12 10 ¹ / ₄	13 0 ¹ / ₄
12 10	12 10 ³ / ₄	13 0 ³ / ₄	270	13 0 ¹ / ₄	13 1 ¹ / ₄	13 3
13 0 ³ / ₄	13 1 ¹ / ₄	13 3 ¹ / ₄	275	13 3	13 4	13 5 ³ / ₄
13 3 ¹ / ₄	13 4 ¹ / ₄	13 6 ¹ / ₄	280	13 6	13 6 ³ / ₄	13 8 ¹ / ₂
13 6 ¹ / ₄	13 7 ¹ / ₄	13 9	285	13 8 ³ / ₄	13 9 ¹ / ₂	13 11 ¹ / ₂
13 9	13 10	13 11 ¹ / ₂	290	13 11 ¹ / ₂	14 0 ¹ / ₂	14 2 ¹ / ₂
13 11 ³ / ₄	14 0 ³ / ₄	14 2 ¹ / ₄	295	14 2 ¹ / ₄	14 3 ¹ / ₄	14 5
14 2 ¹ / ₂	14 3 ¹ / ₂	14 5	300	14 5 ¹ / ₄	14 6	14 7 ³ / ₄
14 5 ¹ / ₂	14 6 ¹ / ₂	14 7 ³ / ₄	305	14 8	14 9	14 10 ¹ / ₄
14 8 ¹ / ₄	14 9	14 10 ³ / ₄	310	14 10 ³ / ₄	14 11 ³ / ₄	15 1 ¹ / ₄
14 11	14 11 ³ / ₄	15 1 ¹ / ₄	315	15 1 ³ / ₄	15 2 ¹ / ₂	15 4
15 1 ³ / ₄	15 2 ¹ / ₂	15 4	320	15 4 ¹ / ₂	15 5 ¹ / ₄	15 7
15 4 ¹ / ₂	15 5 ¹ / ₂	15 6 ³ / ₄	325	15 7 ¹ / ₄	15 8 ¹ / ₄	15 9 ³ / ₄
15 7 ¹ / ₄	15 8 ¹ / ₄	15 9 ¹ / ₂	330	15 10	15 11	16 0 ¹ / ₂
15 10	15 11	16 0 ¹ / ₄	335	16 1	16 1 ³ / ₄	16 3 ¹ / ₄
16 0 ³ / ₄	16 1 ³ / ₄	16 3	340	16 3 ³ / ₄	16 4 ³ / ₄	16 6
16 3 ¹ / ₄	16 4 ¹ / ₄	16 5 ³ / ₄	345	16 6 ¹ / ₂	16 7 ¹ / ₂	16 8 ³ / ₄
16 6 ¹ / ₂	16 7 ¹ / ₂	16 8 ¹ / ₂	350	16 9 ¹ / ₂	16 10 ¹ / ₂	16 11 ¹ / ₂
16 9 ¹ / ₄	16 10	16 11 ¹ / ₄	355	17 0 ¹ / ₄	17 1	17 2 ¹ / ₄
17 0	17 0 ³ / ₄	17 2	360	17 3	17 4	17 5 ¹ / ₄
17 2 ³ / ₄	17 3 ³ / ₄	17 4 ³ / ₄	365	17 5 ³ / ₄	17 6 ³ / ₄	17 8
17 5 ¹ / ₂	17 6 ¹ / ₂	17 7 ¹ / ₂	370	17 8 ³ / ₄	17 9 ¹ / ₂	17 10 ³ / ₄
17 8 ¹ / ₄	17 9 ¹ / ₄	17 10 ¹ / ₄	375	17 11 ¹ / ₂	18 0 ¹ / ₂	18 1 ¹ / ₂
17 11	18 0	18 1	380	18 2 ¹ / ₄	18 3 ¹ / ₄	18 4 ¹ / ₄
18 1 ³ / ₄	18 2 ³ / ₄	18 3 ³ / ₄	385	18 5 ¹ / ₄	18 6	18 7
18 4 ¹ / ₄	18 5 ¹ / ₄	18 6 ¹ / ₂	390	18 8	18 8 ³ / ₄	18 10
18 7 ¹ / ₂	18 8 ¹ / ₄	18 9 ¹ / ₄	395	18 10 ³ / ₄	18 11 ³ / ₄	19 0 ³ / ₄
18 10 ¹ / ₄	18 11	19 0	400	19 1 ¹ / ₂	19 2 ¹ / ₂	19 3 ¹ / ₂
19 1	19 1 ³ / ₄	19 2 ³ / ₄	405	19 4 ¹ / ₂	19 5	19 6 ¹ / ₄
19 3 ³ / ₄	19 4 ³ / ₄	19 5 ³ / ₄	410	19 7 ¹ / ₄	19 8 ¹ / ₄	19 9
19 6 ¹ / ₂	19 7 ¹ / ₂	19 8 ¹ / ₄	415	19 10	19 11	19 11 ³ / ₄
19 9 ¹ / ₄	19 10 ¹ / ₄	19 11	420	20 1	20 1 ³ / ₄	20 2 ¹ / ₄
20 0	20 1	20 1 ³ / ₄	425	20 3 ³ / ₄	20 4 ³ / ₄	20 5 ¹ / ₂
20 2 ³ / ₄	20 3 ³ / ₄	20 4 ³ / ₄	430	20 6 ¹ / ₂	20 7 ¹ / ₂	20 8 ¹ / ₄
20 5 ¹ / ₂	20 6 ¹ / ₂	20 7 ¹ / ₄	435	20 9 ¹ / ₄	20 10 ¹ / ₄	20 11
20 8 ¹ / ₂	20 9 ¹ / ₄	20 10	440	21 0 ¹ / ₄	21 1	21 1 ³ / ₄
20 11 ¹ / ₄	21 0	21 0 ³ / ₄	445	21 3	21 4	21 4 ¹ / ₂
21 2	21 2 ³ / ₄	21 3 ¹ / ₂	450	21 5 ³ / ₄	21 6 ³ / ₄	21 7 ³ / ₄

Deduct 1d per lb. for freight from Canton, at \$90 per 10 cwt.

EXCHANGE at 5s 7d			Cost per Peinl.	EXCHANGE at 5s 8d		
FREIGHT £5 4 ^p 50 feet.	FREIGHT £7 10s. 4 ^p 50 ft.	Overland freight from Shanghai. \$100 per 10 Cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.		FREIGHT £5 4 ^p 50 feet.	FREIGHT £7 10s. 4 ^p 50 ft.	Overland freight from Shanghai. \$100 per 10 cwt. Southampton charges 3s. per bale. Insurance 35s. per cent.
4 ^p lb. s. d.	4 ^p lb. s. d.	4 ^p lb. s. d.	Dolls	4 ^p lb. s. d.	4 ^p lb. s. d.	4 ^p lb. s. d.
10 1 ¹ / ₄	10 2 ¹ / ₄	10 4 ³ / ₄	205	10 3	10 4	10 6 ¹ / ₂
10 4 ¹ / ₄	10 5	10 7 ¹ / ₂	210	10 6	10 7	10 9 ¹ / ₄
10 7	10 8	10 10 ¹ / ₄	215	10 9	10 9 ³ / ₄	11 0 ¹ / ₄
10 10	10 10 ³ / ₄	11 1 ¹ / ₄	220	10 11 ¹ / ₄	11 0 ³ / ₄	11 3
11 0 ³ / ₄	11 1 ¹ / ₄	11 4	225	11 2 ³ / ₄	11 3 ¹ / ₂	11 6
11 3 ³ / ₄	11 4 ¹ / ₂	11 6 ³ / ₄	230	11 5 ¹ / ₂	11 6 ¹ / ₂	11 8 ³ / ₄
11 6 ¹ / ₂	11 7 ¹ / ₂	11 9 ¹ / ₂	235	11 8 ¹ / ₂	11 9 ¹ / ₂	11 11 ³ / ₄
11 9 ¹ / ₄	11 10 ¹ / ₄	12 0 ¹ / ₂	240	11 11 ¹ / ₂	12 0 ¹ / ₄	12 2 ¹ / ₂
12 0 ¹ / ₄	12 1 ¹ / ₄	12 3 ¹ / ₄	245	12 2 ¹ / ₄	12 3 ¹ / ₄	12 5 ¹ / ₂
12 3	12 4	12 6	250	12 5 ¹ / ₄	12 6 ¹ / ₄	12 8 ¹ / ₄
12 6	12 6 ³ / ₄	12 9	255	12 8 ¹ / ₄	12 9	12 11 ¹ / ₄
12 8 ³ / ₄	12 9 ³ / ₄	12 11 ³ / ₄	260	12 11	13 0	13 2
12 11 ³ / ₄	13 0 ¹ / ₂	13 2 ¹ / ₂	265	13 2	13 3	13 5
13 2 ¹ / ₄	13 3 ¹ / ₄	13 5 ¹ / ₂	270	13 4 ¹ / ₄	13 5 ³ / ₄	13 7 ³ / ₄
13 5 ¹ / ₂	13 6 ¹ / ₄	13 8 ¹ / ₄	275	13 7 ¹ / ₄	13 8 ³ / ₄	13 10 ³ / ₄
13 8 ¹ / ₄	13 9 ¹ / ₄	13 11	280	13 10 ³ / ₄	13 11 ¹ / ₂	14 1 ¹ / ₂
13 11 ¹ / ₄	14 0	14 2	285	14 1 ¹ / ₂	14 2 ¹ / ₂	14 4 ¹ / ₂
14 2	14 3	14 4 ³ / ₄	290	14 4 ¹ / ₄	14 5 ¹ / ₂	14 7 ¹ / ₄
14 5	14 5 ³ / ₄	14 7 ¹ / ₂	295	14 7 ¹ / ₄	14 8 ¹ / ₄	14 10 ¹ / ₄
14 7 ³ / ₄	14 8 ³ / ₄	14 10 ¹ / ₂	300	14 10 ¹ / ₄	14 11 ¹ / ₄	15 1
14 10 ¹ / ₂	14 11 ¹ / ₂	15 1 ¹ / ₄	305	15 1 ¹ / ₄	15 2 ¹ / ₄	15 4
15 1 ¹ / ₂	15 2 ¹ / ₂	15 4	310	15 4 ¹ / ₄	15 5	15 6 ¹ / ₂
15 4 ¹ / ₄	15 5 ¹ / ₄	15 6 ³ / ₄	315	15 7	15 8	15 9 ¹ / ₂
15 7 ¹ / ₄	15 8	15 9 ³ / ₄	320	15 10	15 10 ³ / ₄	16 0 ¹ / ₂
15 10	15 11	16 0 ¹ / ₂	325	16 0 ¹ / ₄	16 1 ¹ / ₄	16 3 ¹ / ₄
16 1	16 1 ¹ / ₄	16 3 ¹ / ₄	330	16 3 ¹ / ₄	16 4 ³ / ₄	16 6 ¹ / ₄
16 3 ³ / ₄	16 4 ³ / ₄	16 6 ¹ / ₄	335	16 6 ¹ / ₄	16 7 ¹ / ₂	16 9
16 6 ¹ / ₄	16 7 ¹ / ₂	16 9	340	16 9 ¹ / ₂	16 10 ¹ / ₂	17 0
16 9 ¹ / ₂	16 10 ¹ / ₂	16 11 ³ / ₄	345	17 0 ¹ / ₂	17 1 ¹ / ₂	17 2 ³ / ₄
17 0 ¹ / ₂	17 1 ¹ / ₄	17 2 ³ / ₄	350	17 3 ¹ / ₂	17 4 ¹ / ₄	17 5 ³ / ₄
17 3 ¹ / ₄	17 4 ¹ / ₄	17 5 ¹ / ₂	355	17 6 ¹ / ₄	17 7 ¹ / ₄	17 8 ¹ / ₄
17 6	17 7	17 8 ¹ / ₄	360	17 9 ¹ / ₄	17 10	17 11 ³ / ₄
17 9	17 10	17 11 ¹ / ₄	365	18 0	18 1	18 2 ¹ / ₄
17 11 ³ / ₄	18 0 ³ / ₄	18 2	370	18 3	18 4	18 5 ¹ / ₄
18 2 ³ / ₄	18 3 ¹ / ₄	18 4 ³ / ₄	375	18 6	18 6 ³ / ₄	18 8
18 5 ¹ / ₂	18 6 ¹ / ₂	18 7 ³ / ₄	380	18 8 ³ / ₄	18 9 ³ / ₄	18 11
18 8 ¹ / ₂	18 9 ¹ / ₄	18 10 ¹ / ₂	385	18 11 ³ / ₄	19 0 ³ / ₄	19 1 ³ / ₄
18 11 ¹ / ₄	19 0 ¹ / ₄	19 1 ¹ / ₄	390	19 2 ³ / ₄	19 3 ¹ / ₄	19 4 ³ / ₄
19 2 ¹ / ₄	19 3	19 4	395	19 5 ¹ / ₄	19 6 ¹ / ₂	19 7 ¹ / ₄
19 5	19 6	19 7	400	19 8 ¹ / ₂	19 9 ¹ / ₄	19 10 ¹ / ₂
19 8	19 8 ³ / ₄	19 9 ³ / ₄	405	19 11 ¹ / ₄	20 0 ¹ / ₄	20 1 ¹ / ₄
19 10 ³ / ₄	19 11 ³ / ₄	20 0 ¹ / ₂	410	20 2 ¹ / ₄	20 3 ¹ / ₄	20 4 ¹ / ₄
20 1 ¹ / ₂	20 2 ¹ / ₂	20 3 ¹ / ₂	415	20 5 ¹ / ₄	20 6	20 7
20 4 ¹ / ₂	20 5 ¹ / ₄	20 6 ¹ / ₄	420	20 8	20 9	20 10
20 7 ¹ / ₄	20 8 ¹ / ₄	20 9	425	20 11	21 0	21 0 ³ / ₄
20 10 ¹ / ₄	20 11	21 0	430	21 2	21 2 ³ / ₄	21 3 ³ / ₄
21 1	21 2	21 2 ³ / ₄	435	21 4 ³ / ₄	21 5 ³ / ₄	21 6 ³ / ₄
21 4	21 4 ³ / ₄	21 5 ¹ / ₂	440	21 7 ¹ / ₄	21 8 ¹ / ₂	21 9 ¹ / ₄
21 6 ³ / ₄	21 7 ³ / ₄	21 8 ¹ / ₂	445	21 10 ¹ / ₂	21 11 ¹ / ₂	22 0 ¹ / ₄
21 9 ³ / ₄	21 10 ¹ / ₂	21 11 ¹ / ₄	450	22 1 ¹ / ₂	22 2 ¹ / ₂	22 3

Deduct 3d per lb. for freight from Canton, at \$90 per 10 cwt.

Table showing the cost of Tea. Charges for Commission, Freight, Rent, &c.

Tab. 14.—Table showing the cost of Tea, with all Charges.

Tea, as bought by the picul, and sold in London by the pound avoirdupois.

In this Tea Table, there are three charges included in the amount which is placed opposite the cost per pecul, *viz.*—1. The cost of the tea in pence on the spot itself, at various rates of exchange, many of which are inserted in the next Table.—2. The charges of all kinds till it reaches England, reckoned at 13 per cent. as given in the explanation.—3. The constant quantity of $\frac{1}{10}$ of a penny per lb. for dock-management, rent, &c. In sending tea to the United States, an addition of 8 or 10 cents per pound to the cost, saves an adventure from loss when sold in New-York. The cost per pound in cents, adding about 5 per cent., is the same as in taels and mace per pecul. Thus 30 taels per pecul is $31\frac{1}{2}$ cents per pound.

EXPLANATION OF CHARGES.

INVOICE CHARGES.

Inspecting Brokerage,.....	$\frac{1}{2}$ per cent.
Commission (if on returns 2 $\frac{1}{2}$ per cent. otherwise,).....	3 "
Insurance, from 2 $\frac{1}{2}$ cent to 3 per cent, according to season say, 3	"
Other charges, too small to mention.	— 6 $\frac{1}{2}$ per cent.
Loss in weight, variable, say about,.....	2 $\frac{3}{4}$ "

ACCOUNT SALE CHARGES.

Brokerage,	1 per cent.
Commission,	2½ "
Insurance from fire and other charges, say,	½ "
	<u>3¾</u> per cent.
Dock-management rate, rent &c., $\frac{8}{10}$ d. per lb. avoird.	13 per cent. on cost.

EXAMPLE.

Find the cost of Tea per lb. avoirdupois, purchased in Canton at 40 taels per picul, at the exchange of 4s. 6d. per dollar, with freight £5 per ton.

	d.
40 taels, as per Table,	26.225
Freight,,.....	1.500
	<hr/>
	27.725—say cost 2s. 3½d. per lb.
lb. But should the purchase exceed 40 taels per picul, say 45 taels, then it is easily ascertained thus :—	d.
40 taels as per Table,	26.225
5 " "	3.977
Freight at £5 per ton,	1.500
	<hr/>
	31.702
Deduct for dock-management rate, &c., twice charged,	.800
	<hr/>
	30.902—say cost 2s. 7d. per lb.

FREIGHT TO BE ADDED.

			<i>d. dec.</i>				<i>d. dec.</i>
At £3 per Ton of 50 cubic feet, ...			0.900	At £7 per Ton of 50 cubic feet, ...			2.100
" 4 " 50 "			1.200	" 8 " 50 "			2.400
" 5 " 50 "			1.500	" 9 " 50 "			2.700
" 6 " 50 "			1.800	" 10 " 50 "			3.000

TABLE TO ASCERTAIN THE

at rates of exchange

Cost per Picul.	4s. 0d.	4s. 1d.	4s. 2d.	4s. 3d.	4s. 4d.	4s. 5d.
Taels.	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>
2	1.930	1.952	1.977	2.000	2.024	2.047
3	2.495	2.529	2.566	2.601	2.636	2.671
4	3.060	3.106	3.154	3.201	3.249	3.295
5	3.625	3.682	3.742	3.801	3.860	3.918
6	4.190	4.258	4.331	4.401	4.472	4.543
7	4.755	4.835	4.920	5.002	5.085	5.167
8	5.320	5.411	5.508	5.602	5.696	5.791
9	5.885	5.988	6.096	6.202	6.309	6.415
10	6.450	6.567	6.685	6.803	6.921	7.039
11	7.015	7.144	7.273	7.404	7.532	7.662
12	7.580	7.722	7.861	8.003	8.145	8.286
13	8.145	8.297	8.450	8.603	8.756	8.910
14	8.710	8.875	9.039	9.203	9.369	9.535
15	9.275	9.451	9.627	9.805	9.981	10.157
16	9.840	10.027	10.216	10.405	10.593	10.781
17	10.405	10.605	10.804	11.005	11.205	11.405
18	10.970	11.181	11.392	11.606	11.817	12.029
19	11.535	11.758	11.981	12.206	12.430	12.654
20	12.100	12.335	12.570	12.807	13.041	13.277
21	12.665	12.912	13.160	13.406	13.653	13.901
22	13.230	13.489	13.747	14.006	14.265	14.524
23	13.795	14.066	14.336	14.607	14.877	15.148
24	14.360	14.642	14.925	15.207	15.490	15.772
25	14.925	15.218	15.512	15.807	16.101	16.396
26	15.490	15.796	16.102	16.407	16.713	17.020
27	16.055	16.372	16.691	17.008	17.326	17.644
28	16.620	16.948	17.279	17.608	17.937	18.267
29	17.185	17.526	17.867	18.208	18.550	18.891
30	17.750	18.102	18.455	18.808	19.162	19.515
31	18.315	18.679	19.045	19.409	19.775	20.139
32	18.880	19.256	19.632	20.009	20.386	20.762
33	19.445	19.833	20.221	20.609	20.998	21.386
34	20.010	20.409	20.810	21.209	21.610	22.011
35	20.575	20.986	21.398	21.809	22.222	22.634
36	21.140	21.563	21.987	22.410	22.835	23.259
37	21.705	22.140	22.576	23.010	23.446	23.882
38	22.270	22.716	23.164	23.610	24.057	24.505
39	22.835	23.293	23.752	24.210	24.671	25.131
40	23.400	23.871	24.341	24.812	25.283	25.754
50	29.060	29.639	30.226	30.815	31.403	31.992
60	34.700	35.406	36.112	36.818	37.525	38.231

COST OF TEA IN LONDON,

from 4s. to 5s. per dollar.

4s. 6d.	4s. 7d.	4s. 8d.	4s. 9d.	4s. 10d.	4s. 11d.	5s. 0d.
<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>
2.071	2.095	2.118	2.141	2.165	2.189	2.212
2.706	2.741	2.777	2.812	2.848	2.884	2.919
3.342	3.389	3.436	3.484	3.530	3.577	3.625
3.977	4.036	4.095	4.155	4.214	4.272	4.331
4.613	4.683	4.755	4.825	4.896	4.966	5.037
5.249	5.331	5.414	5.496	5.579	5.661	5.744
5.885	5.979	6.073	6.167	6.261	6.355	6.450
6.520	6.626	6.732	6.839	6.944	7.050	7.156
7.156	7.274	7.391	7.509	7.627	7.744	7.862
7.791	7.921	8.050	8.180	8.310	8.439	8.569
8.427	8.569	8.710	8.850	8.992	9.133	9.275
9.063	9.216	9.369	9.521	9.675	9.828	9.981
9.699	9.863	10.028	10.193	10.358	10.521	10.687
10.334	10.511	10.687	10.864	11.041	11.217	11.394
10.970	11.159	11.346	11.534	11.724	11.911	12.100
11.605	11.806	12.006	12.212	12.406	12.606	12.806
12.240	12.454	12.665	12.876	13.089	13.300	13.512
12.876	13.101	13.324	13.546	13.771	13.995	14.219
13.513	13.747	13.983	14.219	14.454	14.689	14.925
14.148	14.395	14.642	14.889	15.136	15.384	15.631
14.784	15.042	15.301	15.560	15.819	16.077	16.337
15.419	15.690	15.960	16.231	16.501	16.772	17.044
16.055	16.336	16.620	16.902	17.184	17.466	17.750
16.690	16.984	17.279	17.573	17.867	18.161	18.456
17.326	17.631	17.938	18.244	18.550	18.856	19.162
17.962	18.279	18.597	18.915	19.232	19.550	19.869
18.598	18.926	19.256	19.586	19.915	20.245	20.575
19.233	19.574	19.916	20.256	20.598	20.939	21.281
19.868	20.221	20.575	20.928	21.281	21.634	21.987
20.504	20.869	21.234	21.599	21.964	22.329	22.694
21.140	21.516	21.893	22.270	22.646	23.023	23.400
21.775	22.164	22.552	22.940	23.328	23.717	24.106
22.411	22.811	23.211	23.611	24.011	24.411	24.812
23.047	23.459	23.870	24.282	24.694	25.106	25.519
23.683	24.105	24.530	24.953	25.377	25.800	26.225
24.318	24.753	25.189	25.624	26.060	26.495	26.931
24.955	25.400	26.848	26.295	26.742	27.190	27.637
25.589	26.048	26.507	26.966	27.425	27.884	28.344
26.225	26.696	27.166	27.637	28.108	28.579	29.050
32.582	33.170	33.758	34.346	34.935	35.524	36.112
38.938	39.644	40.350	41.056	41.762	42.469	43.175

*Prices of tea in taels and pence.**Prices of cotton in rupees and taels.***Tab. 15.—Comparison of the price of tea per pecul with the rate per pound in pence.**

TAEIS PER PECUL.	At 4s. per Dollar.	At 4s. 7d. per Dollar.	At 4s. 8d. per dollar.	At 4s. 9d. per Dollar.	At 4s. 10d. per Dollar.	At 4s. 11d. per Dollar.	At 5s. per Dollar.
	<i>Pence per lb.</i>	<i>Pence per lb.</i>	<i>Pence per lb.</i>	<i>Pence per lb.</i>	<i>Pence per lb.</i>	<i>Pence per lb.</i>	<i>Pence per lb.</i>
20 equal	10*	11.458	11.666	11.875	12.083	12.291	12.500
21 „	10½	12.031	12.250	12.478	12.687	12.906	13.125
22 „	11	12.604	12.833	13.072	13.291	13.520	13.750
23 „	11½	13.177	13.416	13.666	13.895	14.135	14.375
24 „	12	13.749	14.000	14.250	14.499	14.749	15.000
25 „	12½	14.322	14.583	14.843	15.104	15.364	15.625
26 „	13	14.895	15.166	15.437	15.708	15.979	16.250
27 „	13½	15.468	15.750	16.031	16.312	16.593	16.875
28 „	14	16.041	16.333	16.625	16.916	17.208	17.500
29 „	14½	16.614	16.916	17.218	17.520	17.822	18.125
30 „	15	17.187	17.500	17.812	18.125	18.437	18.750
31 „	15½	17.760	18.083	18.406	18.729	19.052	19.375
32 „	16	18.333	18.666	19.000	19.333	19.666	20.000
33 „	16½	18.906	19.250	19.593	19.937	20.281	20.625
34 „	17	19.479	19.833	20.187	20.541	20.895	21.250
35 „	17½	20.052	20.416	20.781	21.145	21.510	21.875
36 „	18	20.624	21.000	21.375	21.750	22.124	22.500
37 „	18½	21.197	21.583	21.968	22.354	22.739	23.125
38 „	19	21.770	22.166	22.562	22.958	23.354	23.750
39 „	19½	22.343	22.750	23.156	23.562	23.968	24.375
40 „	20	22.916	23.333	23.750	24.166	24.583	25.000

To convert dollars per pecul into shillings per pound at 4s. per dollar.—Multiply by 3, and divide by 100.

To convert dollars per pecul into shillings per cwt., at the same exchange.—Multiply by $3\frac{26}{100}$.

To convert shillings per pound into dollars per pecul, at 4s. per dollar.—Multiply by 100, and divide by 3.

To convert shillings per cwt. into dollars per pecul, at the same exchange.—Multiply by $2\frac{3}{4}$, and divide by 100; the result will be nearly correct.

Table 16.—Comparison of Canton and Bombay prices of Cotton.

A Bombay patent bale weights 3 cwt.; $2\frac{1}{3}$ bales are consequently equal to a candy of 7 cwt.

A Calcutta bale of cotton weighs $2\frac{1}{3}$ peculs, and 5 bales make a ton of 50 feet measurement.

At Calcutta, cotton is sold at sicca rupees per bazar maund. In lieu of a table of comparative prices, the following rule will suffice:—

* Which at one tael per pecul is just a halfpenny per pound.



*Prices of Cotton.**Logarithmic Table for measuring packages.*

To convert *sicca rupees per bazar maund* into *taels per pecul*, at the exchange of 205 *sicca rupees per \$100*.—Multiply the *sicca rupees* by the decimals .57, and the result will be very nearly correct. Thus, 12 *sicca rupees per bazar maund*, multiplied by .57, gives 6.84 *taels per pecul*.

To convert *taels per pecul* into *sicca rupees per bazar maund*, at the same exchange.—Add $\frac{3}{4}$ to the number of *taels*. Thus, τ . 6.84 per pecul, add $\frac{3}{4}$ ths or τ . 5.13 = *Sicca Rs.* 11.87 per bazar maund.

Canton price per pecul.		Bombay Price per Candy.		Canton price per pecul.		Bombay Price per Candy.	
at 216 per \$100		at 200 per \$100		at 216 per \$100		at 200 per \$100	
Taels.	mace.	Rupees.	Rupees.	Taels.	mace.	Rupees.	Rupees.
5	0	88.20	81.666	9	0	158.76	147.000
6	0	105.84	98.000	9	5	167.58	155.166
6	5	114.66	106.166	10	0	176.40	163.333
7	0	123.48	114.666	10	5	185.22	171.481
7	5	132.30	122.500	11	0	194.04	179.639
8	0	141.12	130.666	11	5	202.86	187.879
8	5	149.94	139.000	12	0	211.68	196.000

Note.—The above calculations are made on the supposition that one candy of cotton weighs here 5.88 peculs. A tael is equal to 3 rupees at the exchange of 216 rupees per \$100.

Section 5.

MEASUREMENT OF CARGO.

The logarithmic tonnage rod or callipers which accompanies this table is a very ingenious instrument, invented by Mr Stansbury, an American merchant, formerly of Canton, and is graduated, not by feet and inches, but by the dimensions corresponding to the logarithms thereof. These logarithms being ascertained by measurement, and added up, the feet and decimal parts corresponding to the sum of them are ascertained by Table 17, on the opposite leaf.

On the rod is placed a small auxiliary table, for the purpose of ascertaining the amount of freight corresponding to given logarithms, at various rates per ton.

Measure the package, the cubic contents of which are required, noting the number of the division each dimension extends to; add the three numbers together; point off and reserve the thousands, or fourth left hand figures, if there be any; then find, on the upper line of the table the other three figures, or the next less figures marked there (for they are marked only by fives); immediately under them are five lines of four figures each, one of which lines will correspond to the exact number. Thus, under No. 740 are these five lines of figures, 5495, 5508, 5521, 5534, and 5546, which mean that the figures corresponding to No. 740 are 5495;—to No. 741, 5508;—to No. 742, 5521; to No. 743, 5534;—and to No. 744, 5546; which will be easily understood by inspection and a little practice.

*Rules for using the table.**Average sizes of Packages of cargo.*

Those figures when found, will be the cubic feet and decimal parts of a cubic foot contained in the package or thing measured, as many figures to be estimated whole numbers as there were thousands pointed off and reserved; the rest of them are decimals. When the sum of the three dimensions is less than 1000, and consequently has no fourth left hand figures, all the figures taken out of the table are decimals. Thus, suppose the three dimensions added together make 1,740; then the figures answering to No. 740 are to be written 5.495, or $5\frac{495}{10000}$ feet: but if they make 2,740, then the figures are to be written as two whole numbers and two decimals, 54.95, or $54\frac{95}{1000}$ feet. Or, if the numbers are simply 740, not amounting to 1000, as there is no fourth left hand figure, they are of course all decimals, and the contents will be .5495, or $\frac{5495}{10000}$ of a foot.

Tab. 18.—Average Weights and Measurements of common Goods.

ARTICLES.	Net Weight.	Measure- ment.	Packages in a ton of 40 feet.	Packages in a ton of 50 feet.
<i>cubic feet.</i>				
TEAS.—Congou, - - chests	85 lbs	4.5	9	11
do. - - half chests	40 "	2.5	16	20
Souchong, - - chests	80 "	4.5	9	11
do. - - half chests	37 "	2.6	16	20
Flowery Pekoe, - chests	65 "	4.5	9	11
Orange Pekoe, half chests	50 "	2.5	16	20
Powchong, - "	30 "	2.2	18	23
Ningyong and Oolong, "	36 "	2.5	16	20
Hyson, - - chests	70 "	4.3	9.3	11.6
do. - - half chests	46 "			
Young Hyson, - - "	55 "	3.1	13	16
Gunpowder, - - "	58 "			
Imperial, - - "	53 "			
Twankay, - - "	49 "			
Hyson Skin, - - chests	68 "	4.2	9½	12
Raw Silk, - - bale	80 catties	6.0	6½	8½
do. - - case	50 lbs	2.6	15.4	19½
Cassia in mats, - - bundle	50 catties	4.0	10	12½
do. cases, - - cases	50 "	5.8	7	8½
Rhubarb, - - "	50 "	3.6	11	14
Cassia Buds, - - "	1 pecul	5.2	7.7	9.6
Star Anise, - - "	1 "	8.5	4.7	5.9
Camphor, - - "	1 "	4.1	9.7	12.2
Cassia Oil, - - "	½ "	2.8	14.3	17.9
Anise, - - "	½ "	2.5	16	20
Vermilion, - - "	½ "	1.2	33	41.7
Split Rattans, - - bundle	½ "	3.6	11	14
Preserves, - - cases	6 jars	1.83	22	27.3
Fire Crackers, - - "	40 packs	0.42	95	120
Rattan Chairs, - - bundle	2 chairs	13.75	3	3.6
Matting, size $\frac{3}{4}$ - - roll	40 yds.	3.6	11	14
do. " $\frac{4}{4}$ - - "	"	4.8	8½	10.4
do. " $\frac{5}{4}$ - - "	"	6.0	6½	8½
do. " $\frac{6}{4}$ - - "	"	7.2	5.6	7

Trade in Bullion. Specie from England. Value of dollars in rupees.

Section 6.

OPERATIONS IN BULLION.

Coined and uncoined bullion was formerly a considerable article of import into China, particularly at the commencement of the American trade, when the United States afforded no manufactures marketable at Canton, and the trade in British manufactured goods had not yet been taken up by them. This branch of import commerce is now confined to no nation, and fluctuates according to the demand. The export of bullion from China was very large up to about 1852, when the high rates of exchange ensuant on the opening of the Californian and Australian mines, and still more the internal troubles in China interrupting the sale for imports, and making the tea trade more a specie one, began to bring the balance the other way. Between the years 1831-34, there were exported only the following sums in silver bullion:—

1830-31	\$6,595,306	1832-33...	\$4,825,755
1831-32	3,971,818	1833-34....	6,217,820

The export of silver is almost wholly in sycee silver, and a little South American bar silver.

The importation of silver from England into China has never been very great, and the annual amounts fluctuate very much, as the following sums show:—

Years.	ounces.	Years.	ounces.	Years.	ounces.
1828....	5,752	1833....	22,284	1837....	122,840
1829....	35,330	1834....	158,326	1838....	125,197
1830....	39,397	1835....	213,005	1839....	947,257
1831....	21,873	1836....	8,690		

During the war between England and China, a much larger amount of specie entered the country, which did not all find its way back again in the amount paid by the Chinese government for the expenses of the war. From 1844 to 1852 the importation from England was much greater than the amounts given above for eleven years, while during the years 1852 to 1856, the monthly import of specie has often reached a million of dollars.

Dollars and sycee when taken to India, are recoined into rupees. Assuming the Spanish dollar to weigh 416 *grs.*, and to be 5 *dts.* worse, we have for

100 Dollars	{ = 231.111 tolas in weight.	{ less seignorage } = 221.341 Fkd. rupees
	{ = 225.858 Fkd. rupees	
	{ = 211.742 Sicca rupees	
		{ 2 per cent. } = 207.508 Sicca rupees.

The result of a recoinage of sycee and broken dollars at Calcutta is as follows—

100 taels of	{ = 322.135 tolas in weight = 120 oz. 16 dwts. English.	
sycee silver, av.	{ = 314.108 Comp. rupees.	{ or deducting duty } 337.226 Co. rupees.
15 dwts better	{ = 322.602 Sicca rupees.	{ of 2 per cent. } 316.150 Sa. rupees.
100 taels of	{ = 314.811 Comp. rupees.	{ or deducting duty } 308.515 Co. rupees.
dollars, 5 worse	{ = 295.135 Sicca rupees.	{ or 2 per cent. } 289.233 Sa. rupees.

Prices of Bullion.

Rules for finding the value of Gold.

Average prices of various descriptions of Bullion.

Some remarks on the fluctuations in the prices of various sorts of dollars and bullion are contained on pages 162, 291, &c. The prices twenty years ago, were for:—

	Spanish Dollars, unchopped.	Sycee silver.	Gold.
1832-33.	1 a 2½ p. ct. prem.	1½ a 2½ p. ct. prem.	\$23 a 23½ p. tael
1833-34	1 a 3 ,,	2 a 2½ ,,	\$22.95 ,,

During the year 1856, the price of Carolus dollars at Canton was 32 to 35 per cent. premium; sycee varied from τ . 6.8 to τ . 9 and τ . 11 per cent. premium; and gold from \$21.20 to \$21.70 per tael, chopped Mexican dollars being at par. Latterly, Republican dollars alone have been brought to China, and form the currency at Canton and Hongkong, and in a large degree at the other ports.

Operations in Gold.

The British standard purity of gold is 22 carats of fine gold, out of 24 carats full weight of metal, say $\frac{1}{2}$ or 91.66 per cent., the same as the standard silver of Calcutta. The gold carat is a nominal weight, divided into 4 grains.

To find the standard weight of gold.—State a question of proportion:—As 22 carats are to the assay or report of fineness, so is the actual weight to the quantity that is to be added to, or subtracted from the actual weight, according as the report is *better* or *worse*.

To find the quantity of pure gold in any given weight of assayed gold.—Find the standard weight, and subtract from it one twelfth part.

To find the value of gold.—Gold is valued either from its actual weight by a price varying according to the variation in purity, being about 3s. 6d. per carat, and 10½d. per grain, if better;—or 4s. per carat, and 1s. per grain, if worse; the latter allowance being the greater to defray the expense of refining:—*Or*, it is valued by the market price per ounce standard, from the quantity of standard gold.

Coins are usually valued at the mint price of gold, which is £3 17s. 10½d. per ounce standard. In calculating the price, it is convenient to assume the rate of 20s. per ounce; every pennyweight will then be a shilling, and every grain a halfpenny.

	£	s.	d.
Thus, 171 oz. 11 dwts. 12 grs. will be	171	11	6
Suppose the price to be £3 16s.			4
	×		
Which gives the amount, at £4.	687	6	0
Subtract a fifth of original amount, equal to 4s.	34	6	4
And you have the amount at £3 16s.	£651	19	8

To ascertain the sterling value of gold coins, at the standard of £3 17s. 10½d. per oz.—Add to or subtract from the standard, the assay report of better or worse. Reduce the carats into grains, which multiply by the weight in grains. Multiply the product by 92182, and point off nine decimals from the product, which will leave the answer in pounds and decimals of a pound sterling.

To find the value of Gold Coins. Standards of silver compared. Touch.

Thus, what is the value of a Prussian double Frederick d'or, weighing 8 dwts. 14 grs., and reported worse 2 grs.

$$\begin{array}{r}
 \text{From } 22 \text{ } 0 \text{ the fineness of English standard gold,} \\
 \text{Deduct } 2 \\
 \hline
 21 \text{ } 2 \text{ or } 86 \text{ grains.}
 \end{array}$$

Then 8 dwts. 14 grs. = 260 grs. $\times \frac{86}{100} = 177 \frac{16}{100} \times 92 \frac{182}{100} = \text{£}1.633096312$, or
 £1 12s. 7.94d.

Or it can be done by two proportions. Thus, supposing a Louis d'or of 9 dwts. 20 grs. weight, and 21 car 2½ grs. fineness: we say, as 22 car. : 21 car. 2½ grs. : 9 dwts. 20 grs. : 9 dwts. 16 grs., the amount of standard gold. Then as 1 oz. : 31 17s. 10½d. : : 9 dwts. 16 grs. : 11 17s. 7½d., the sterling value of the Louis d'or.

Operations in Silver.

Touch.—To ascertain the touch from the assay master's report, 'Better or worse than standard,' usually requires a troublesome calculation. This difficulty is obviated by Table 19. For instance, if silver at Calcutta is reported 8 dwts. better, we find from the Table that the Calcutta standard contains 91.66 per cent., or 11 ounces of pure silver in 12 ounces of standard, adding to which 8 dwts., we have 11 oz. 8 dwts., or 95 per cent. touch. But if reported in London 8 dwts. better, the English standard being 11 oz. 2 dwts., the sum of both is 11 oz. 10 dwts., or 95.833 per cent. touch.

Tab. 19.—English and Chinese modes of stating the purity of silver.

English Assay.	Chinese Touch.	English Assay.	Chinese Touch.	English Assay.	Chinese Touch.
Oz. dwts.	Per cent.	Oz. dwts.	Per cent.	Oz. dwts.	Per cent.
		E. I. Company's Standard.			
12 0	100.000	11 0	91.666	10 0	83.333
11 10	99.583	10 19	91.250	9 19	82.916
11 18	99.166	10 18	90.833	9 18	82.500
11 17	98.750	10 17	90.416	9 17	82.083
11 16	98.333	10 16	90.000	9 16	81.666
11 15	97.916	10 15	89.583	9 15	81.250
11 14	97.500	10 14	89.166	9 14	80.833
11 13	97.083	Standard of Spanish dollar.		9 13	80.417
11 12	96.666	10 13	88.750	9 12	80.000
11 11	96.250	10 12	88.333	9 11	79.583
11 10	95.833	10 11	87.916	9 10	79.166
11 9	95.416	10 10	87.500	9 9	78.750
11 8	95.000	10 9	87.083	9 8	78.333
11 7	94.583	10 8	86.666	9 7	77.916
11 6	94.166	10 7	86.250	9 6	77.500
11 5	93.750	10 6	85.833	9 5	77.083
11 4	93.333	10 6	85.416	9 4	76.666
11 3	92.916	10 4	85.000	9 3	76.350
11 2	92.500	10 3	84.583	9 2	75.833
English Standard.		10 2	83.166	9 1	75.446
11 1	92.083	10 1	83.750	9 0	75.000

Charges on Dollars brought to China. To find the standard weight of Silver.

Tab. 20—Showing the charges on Dollars bought in London.

TABLE showing at what rate Mexican Dollars purchased in London at a certain rate—the charges being freight and transit duty $2\frac{1}{4}$ per cent., insurance $1\frac{1}{2}$ per cent., brokerage $\frac{1}{2}$ per cent., and sundries .211, (say in all 4.116 per cent.)—can be laid down in China in sterling. Datum 17 *dwt.* 11 *grs.* to the *oz.*

N. B.—For every $\frac{1}{2}$ per cent. charges more or less, add or subtract .0654 to these rates.

Rate per oz.	Value of a dollar	Rate per oz.	Value of a dollar	Rate per oz.	Value of a dollar	Rate per oz.	Value of a dollar
<i>pence.</i>	<i>d. dec.</i>	<i>pence.</i>	<i>d. dec.</i>	<i>pence.</i>	<i>d. dec.</i>	<i>pence.</i>	<i>d. dec.</i>
57	51.804	59 $\frac{1}{2}$	53.849	61 $\frac{1}{2}$	55.894	63 $\frac{3}{4}$	57.939
57 $\frac{1}{8}$	51.918	59 $\frac{3}{8}$	53.962	61 $\frac{5}{8}$	56.008	63 $\frac{7}{8}$	58.052
57 $\frac{1}{4}$	52.031	59 $\frac{1}{2}$	54.076	61 $\frac{1}{2}$	56.121	64	58.166
57 $\frac{3}{8}$	52.143	59 $\frac{3}{8}$	54.190	61 $\frac{3}{8}$	56.235	64 $\frac{1}{8}$	58.280
57 $\frac{1}{2}$	52.258	59 $\frac{1}{2}$	54.303	62	56.348	64 $\frac{1}{4}$	58.393
57 $\frac{5}{8}$	52.372	59 $\frac{5}{8}$	54.417	62 $\frac{1}{8}$	56.462	64 $\frac{3}{8}$	58.507
57 $\frac{3}{4}$	52.486	60	54.530	62 $\frac{1}{4}$	56.576	64 $\frac{1}{2}$	58.620
57 $\frac{7}{8}$	52.599	60 $\frac{1}{8}$	54.644	62 $\frac{3}{8}$	56.689	64 $\frac{5}{8}$	58.734
58	52.713	60 $\frac{1}{4}$	54.758	62 $\frac{1}{2}$	56.803	64 $\frac{3}{4}$	58.848
58 $\frac{1}{8}$	52.826	60 $\frac{3}{8}$	54.871	62 $\frac{5}{8}$	56.916	64 $\frac{7}{8}$	58.961
58 $\frac{1}{4}$	52.940	60 $\frac{1}{2}$	54.985	62 $\frac{3}{4}$	57.030	65	59.075
58 $\frac{3}{8}$	53.054	60 $\frac{3}{4}$	55.098	62 $\frac{7}{8}$	57.144	65 $\frac{1}{8}$	59.188
58 $\frac{1}{2}$	53.167	60 $\frac{5}{8}$	55.212	63	57.257	65 $\frac{1}{4}$	59.302
58 $\frac{5}{8}$	53.281	60 $\frac{7}{8}$	55.326	63 $\frac{1}{8}$	57.371	65 $\frac{3}{8}$	59.416
58 $\frac{3}{4}$	53.394	61	55.439	63 $\frac{1}{4}$	57.484	65 $\frac{1}{2}$	59.529
58 $\frac{7}{8}$	53.508	61 $\frac{1}{8}$	55.553	63 $\frac{3}{8}$	57.598	65 $\frac{5}{8}$	59.643
59	53.622	61 $\frac{1}{4}$	55.667	63 $\frac{1}{2}$	57.712	65 $\frac{3}{4}$	59.756
59 $\frac{1}{8}$	53.735	61 $\frac{3}{8}$	55.780	63 $\frac{5}{8}$	57.825	65 $\frac{7}{8}$	59.870

To convert the actual weight into standard weight, in London called also the pay weight.—Multiply the actual weight by the number of pennyweights in the report, and divide the product by the standard, viz. in England, 222 *dwt.*, and in Calcutta, 220 *dwt.*; the quotient is the betterness or worseness, which add to or subtract from the actual weight.

Example.

To reduce 17 *lbs.* 10 *oz.* 15 *dwt.* of silver, reported worse 8 $\frac{1}{2}$ *dwt.*, to standard weight.

<i>lbs. oz. dwt.</i>			<i>lbs. oz. dwt.</i>		
17	10	15	17	10	15
			or 214 15 actual weight.		
			× 8 $\frac{1}{2}$ worse.		
			1718 0		
			107 7 $\frac{1}{2}$		
			222) 1825 7 $\frac{1}{2}$ (8 oz. 4 <i>dwt.</i>		
17	10	15			
84	Full weight				
	Worseness				
17	2	11	or 206 oz. 11 <i>dwt.</i> standard weight.		

Valuation of silver bullion and coins. To ascertain the pure silver in a mass.

To find the value of silver.—Suppose 206 oz. 11 dwts. of the former example, sold at 5s. per ounce.

$$\begin{array}{r}
 \text{oz. dwts.} \\
 206 \quad 11 \\
 \quad \quad 6 \\
 \hline
 20 \quad) \quad 55 \quad (\quad 2s. \ 9d. \\
 206 \text{ oz.} \times 5s. = 1030s. \ 0d. \\
 \hline
 1032s. \ 9d. \text{ or } £51 \ 12s. \ 9d.
 \end{array}$$

Or the value of silver may otherwise be found by the use of the following formula:—Assume the price of 20s. per ounce; then every ounce will represent a pound sterling; every pennyweight (there being 20 in an ounce) will be a shilling; and every grain (there being 24 in a dwt.) a halfpenny. We have then for the above silver, the sum of £206 11s., or at 5s. the quarter thereof, £51 12s. 9d. Any other price may be calculated in the same way by taking parts of a pound.

At 5s. per standard ounce, a pennyweight is worth 3 pence;—a grain is worth $\frac{1}{8}$ of a penny;—a penny is equal to 8 grs. British standard, or 7.4 grs. of pure silver;—a shilling is equal to 96 grs. British standard, or 88.8 grs. of pure silver.

Coins are usually valued from the standard weight, at the fixed price of 5s. per oz. standard. Dollars are sold by their actual weight at a variable price per ounce, without calculating the standard weight. Other silver is sold by the standard weight, at a variable price per ounce standard.

To calculate the quantity of pure silver in any given weight of assayed silver.

If the silver is $\left\{ \begin{array}{l} \text{British} \\ \text{Calcutta} \end{array} \right\}$ standard, multiply by $\left\{ \begin{array}{l} 37 \\ 11 \end{array} \right\}$ and divide by $\left\{ \begin{array}{l} 40 \\ 12 \end{array} \right\}$.

If better or worse than standard, let the betterness or worseness be added to or subtracted from the standard, viz., British, 222 dwts.; Calcutta, 220 dwts. Multiply the weight by the result, and divide the product by 240.

To calculate the sterling value of silver coins at 5s. per standard oz.

—Add to, or subtract from, the standard, which is 222 dwts., the assay report of better or worse, multiply the result by the weight in grains, which product multiply by 563. Then point off six decimals, which will give the value in pence and decimals of a penny.

Thus, the Spanish dollar weighs 416 grs., and is 8 dwts. worse.

Standard 222 dwts.

Deduct 8

$$204 \times 416 \text{ grs.} = 89024 \times 563 = 50.120512 \text{ pence.}$$

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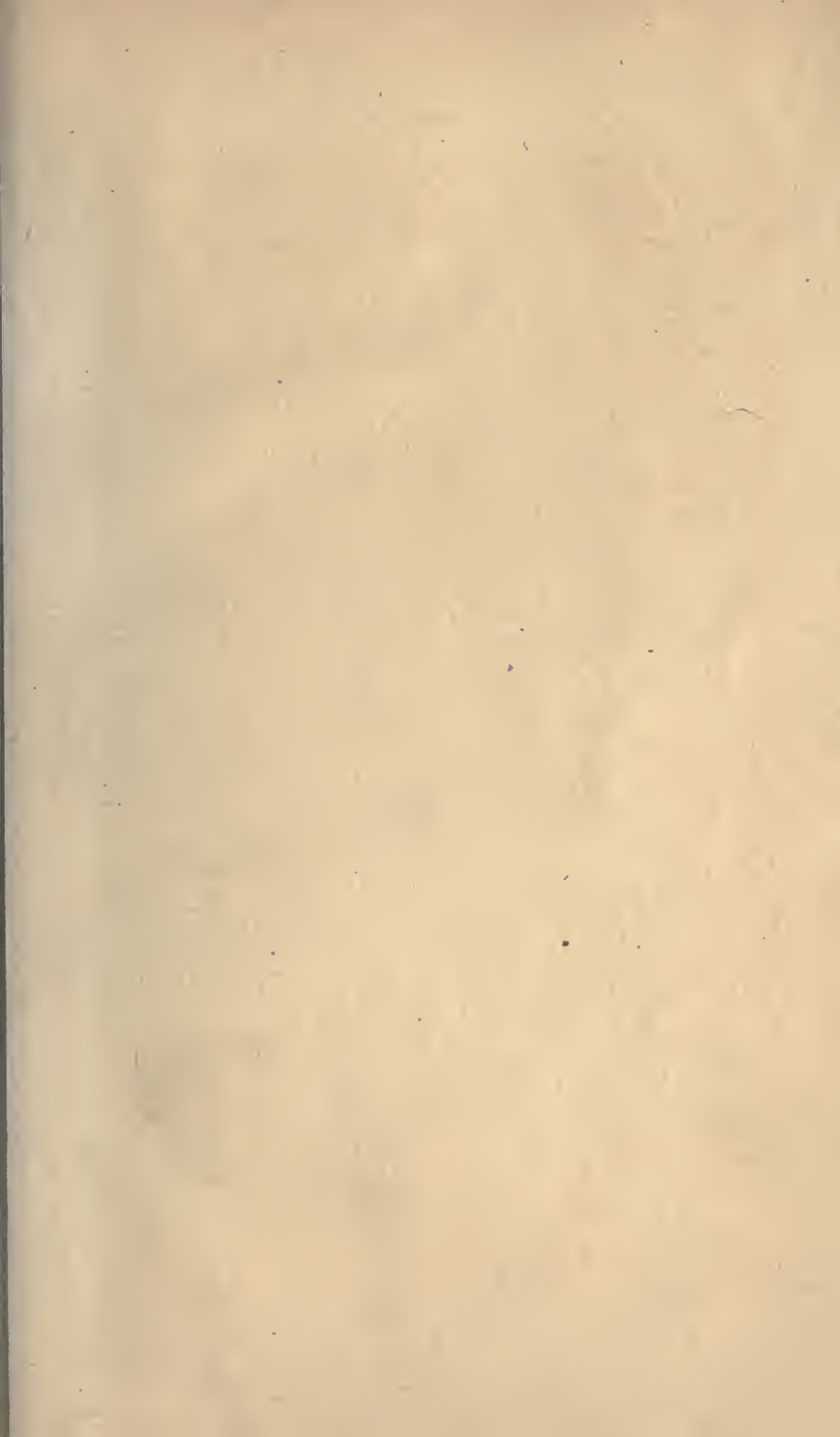
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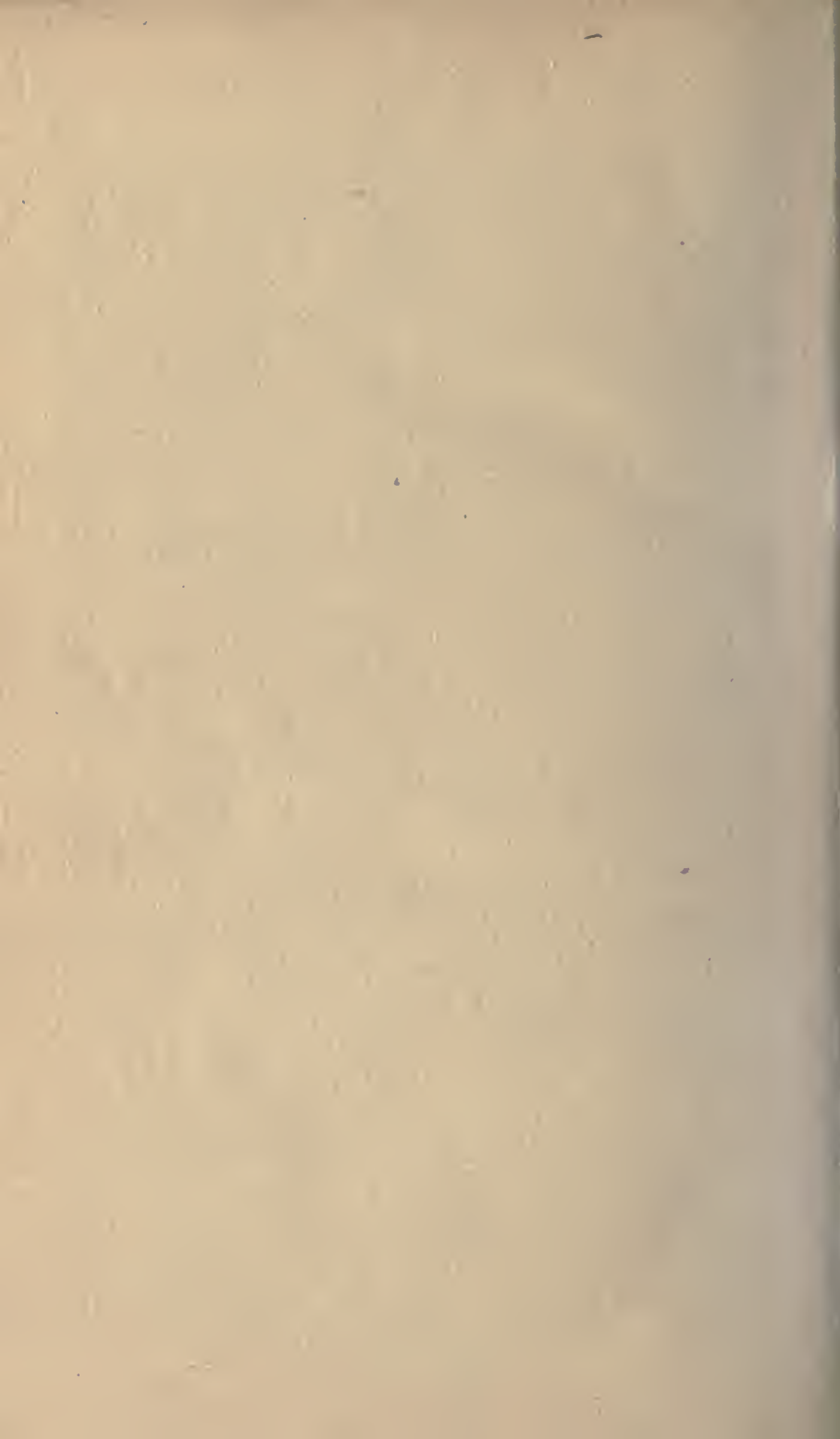
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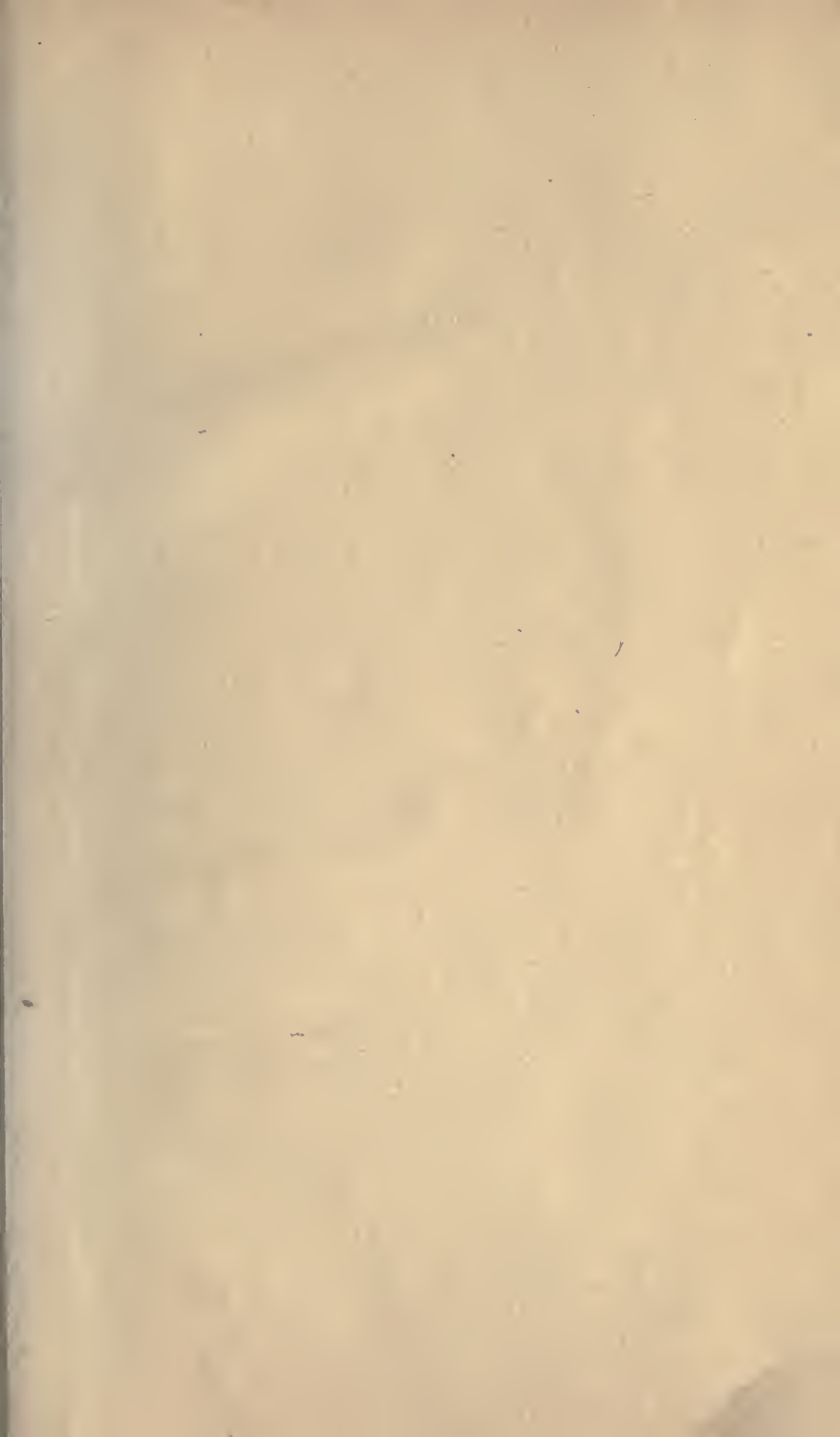
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July 25 - 9.00 a.m.

